



International and national experience in the legal regulation of land and soil protection in urban agglomerations

Natalia Lisina^{1*}, Anton Belkov¹, Natalia Sedina¹, Svetlana Ivanova^{2,3*},

¹Department of Labor, Environmental Law and Civil Procedure, Law Institute, Kemerovo State University, 6 Krasnaya str., Kemerovo, 650043, Russia

²Institute of NBICS-technologies, Kemerovo State University, 6 Krasnaya str., Kemerovo, 650043, Russia

³Department of TNSMD Theory and Methods, Kemerovo State University, 6 Krasnaya str., Kemerovo 650043, Russia

Abstract

The development of legal regulation of the rational use of land and soils in urban agglomerations as a whole is a priority in solving environmental problems in the context of creating comfortable living conditions for people in the city. In this regard, there is a need for a special analysis of legal measures for the protection of urban land and soils, the formulation of theoretical and practical foundations for the legal regulation of the relations under consideration based on an integrated approach to reduce and (or) prevent the negative impact of economic and other activities and, as a result, improve the living conditions of the urban population. Solving the problems of legal protection of land and soils of urban agglomerations should be considered as a necessary condition for their socio-economic development, since it is the most important direction of state policy as a whole.

Keywords: urban soils; urban agglomerations; legal measures; land protection.

Full length article *Corresponding Authors, e-mail: lisina_nl@mail.ru (N.L.), pavvm2000@mail.ru (S.I.) Doi # <https://doi.org/10.62877/17-IJCBS-24-26-20-17>

1. Introduction

Land and soils are among those components of the natural environment that are exposed to the most intense anthropogenic stress in urban conditions. As a result, negative changes occur in the state of lands and soils, which, due to their close relationship with other components of the natural environment, affect both their condition and the state of the environment as a whole [1]. It should be noted that due to their unique life-supporting functions for all living organisms, it is land and soils that should be given a respective priority for legal protection. Land and soils perform related ecological, nature-regulating, and production functions. This versatility is unique because the importance of indicators of the state of lands and soils for assessing environmental conditions is much higher than indicators of the state of other components. Land and soils [2] play a primary role in mitigating climate change, being natural carbon sinks that filter the entry of pollutants into waters, plants, other components of the natural environment and into the human body [3]. Land and soils are inextricably linked to air and water through the regulation of the quality of the latter – the environmentally sound functioning of land and soils supports biodiversity, marine environment protection, coastal area management and mitigation of climate change. At the same time, land and soils are permanently exposed to serious

degradation processes such as erosion, compaction, reduction of organic matter, pollution, loss of biodiversity, salinization, and sealing [4]. In this regard, it is necessary to introduce new legal norms for the protection of designated objects of law [5]. The purpose of the study was to assess the availability of legal measures for the protection of urban lands and soils, to formulate theoretical and practical foundations for the legal regulation of the relations under consideration to ensure the living conditions of the urban population.

2. Methods

2.1. Objects of research

Environmental and related other social relations that develop in the process of legal protection of land and soils of urban agglomerations.

2.2. Research methods

The methodological basis of the research was a general scientific dialectical approach, including the study of natural and social phenomena in their unity, interrelation and interdependence, the study of phenomena in retrospective development, the study of phenomena in connection with public practice. In addition, the study used a private scientific approach through the methods of technical and legal analysis, comparison, and system analysis.

3. Results and discussion

Legal measures for the protection of lands and soils of urban areas using the EU as an example: practice and proposals

It is recognized that the degradation of EU soils is the result of irrational land use and management, overexploitation of soils and emissions of pollutants. The EU environmental policy in the field of soil protection and rational use is reflected in consistently adopted road maps [6]:

1) Council Directive 91/692/EEC standardizes and rationalizes reporting on the implementation of a number of EU environmental documents in order to create a unified conceptual and terminological apparatus [7];

2) Council Directive 1999/31/EC [8] forms approaches for interaction on landfills to limit the possibilities of land seizure;

3) Commission Decision 2000/532/EC, Decision 75/442/EEC of the Council of the EU (Article 1 (a)), Decision 91/689/EEC of the Council of the EU (Article 1(4)) Decision of the European Commission to replace Decision 94/3/EC define the waste list, establish a list of hazardous waste to regulate waste disposal, land pollution and use of soil recesses [9];

4) Directive 2003/4/E is dedicated to issues of public access to environmental information [10];

5) Directive 2004/35/CE [11] defines the concept of environmental responsibility in relation to the prevention and compensation of environmental damage and liability for environmental damage;

6) Thematic Strategy for Soil Protection [SEC (2006)620], [SEC (2006)1165] forms approaches to curbing physical soil degradation and maintaining the system functions of soils [12];

7) Directive 2008/1/EC; Directive 2008/98/EC are dedicated to industrial and household waste issues for the regulation of waste disposal, land pollution and the use of soil recesses [13];

8) Directive 2010/75/EU of the European Parliament and of the Council is dedicated to the issues of integrated pollution prevention for the control of industrial emissions and pollution [14];

9) Directive (EU) 2019/904 is dedicated to reducing the environmental impact of certain plastic products in order to reduce the amount of plastic waste [15];

10) Soil Strategy for 2030 – the EU soil strategy until 2030 and beyond is related to ensuring the health of soils, people, food, nature and climate [16].

The EU Soil Strategy for 2030 is one of the aspects of the European Green Agreement and a key outcome of the 2030 Biodiversity Strategy [17]. Using the stated approach, the EU will be able to combat the diverse cross-border causes of soil degradation, such as improper land management, climate change, unsustainable agriculture, land sealing and pollution. As shown in Figure 1, soil protection is a common strategic global initiative of the EU.

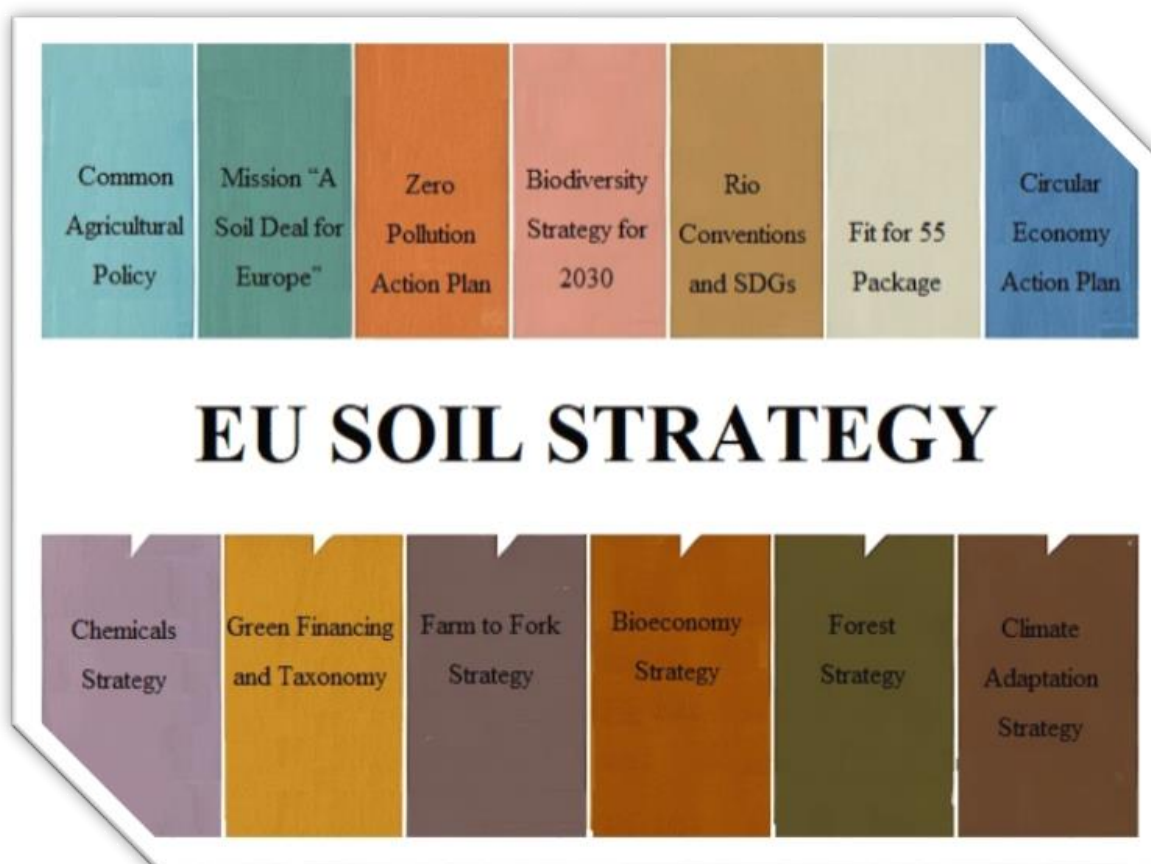


Figure 1. The relationship between the soil strategy and other EU initiatives.

Source: Scheme by authors, the idea [18].

The widespread degradation of lands and soils leads to the fact that humanity is irretrievably losing key ecosystems – the "sealing of lands and soils" turns the planet into a concrete desert. Having suffered from increased vulnerability to extreme weather events and other external factors, some EU countries have set targets to reduce land seizures [19]. In recent years, some EU countries have achieved significant successes: from 50% to 80% of the declared territories have been restored through the conservation of biodiversity, forests and green spaces, land for food and biomass production, water and precipitation management [20]. High environmental results were obtained by applying the hierarchy of land use planning: 1) prevention (if possible, avoid additional land drainage and soil compaction; 2) reuse (if it is impossible to avoid seizure and/or sealing of land, it is better to reuse already seized or sealed land, for example, after demolition of buildings, soil reclamation, depressurization or compacting); 3) minimization (if it is impossible to avoid seizure and or sealing of land, or reuse, the areas that are already in the least favorable condition should be seized or sealed, for example, without a healthy forest or fertile agricultural land); 4) compensation for damage (in case of seizure and/or sealing of land, taking mitigation measures to minimize losses) [21]. It should be noted that methods and instructions for measuring and interpreting soil health indicators are provided in the FAO Protocol on the Assessment of Sustainable Soil Management and its User Manual (FAO and ITPS, forthcoming). In practice, the protocol provides a set of tools for assessing soil functions in agricultural use, thereby providing a method for assessing the condition of the soil at a certain moment and during a specific intervention in accordance with VGSSM. The benefits of sustainable management of the soil environment to ensure environmental safety are determined by ensuring food security, providing ecosystem services, achieving sustainable development and reducing the negative impact of climate change [22].

Legal measures for the protection of land and soils in urban agglomerations of the Russian Federation: practice and proposals

The Federal Law "On Environmental Protection" refers change land to the components of the natural environment, along with soils and uses the term "soil cover" [23]. The Land Code of the Russian Federation uses the concepts of "land and soils", "soil layer", "fertile soil layer", and in the Urban Planning Code of the Russian Federation the terms "land plot" and "territory" are more often used, while "land" is used less often and the term "soils" does not occur at all [24, 25].

The use of various terms in normative legal acts gives rise to various scientific discussions, but at the same time the non-identity of the "land" and "soil" concepts prevails. Scientists emphasize the need to protect soils, since they are the central link of ecological relations, uniting other structural and functional components into a single whole [26]. Sharing the scientists' position on land and soils as independent objects of legal protection, we find it important to note that soil is an optional but useful property of land with certain characteristics (for example, fertility). The very theoretical idea of soils as an object of legal protection is of significant practical importance, since the use of land (impact on an environmental component), as a surface can be accompanied both with the use of its soil layer (the most

valuable substance) and without such use, be both appropriate and inappropriate (harmful, illegal) use (impact).

The characteristics of the surface layer of the land affect its legal regime, the possibility of its use for certain purposes, determine the scope of powers and responsibilities, including protection, although the presence or absence of a fertile soil layer does not affect the implementation of registration and accounting functions by the country and is not reflected in information about land plots.

From a legal point of view, soils are considered as:

- a component of the natural environment;
- a natural object that is part of nature;
- a natural resource used and protected as a condition for the life and activities of the peoples living in the respective territory;
- the object of public environmental relations [27].

There is still no legal definition of soil as an object of legal protection in the federal law, as well as there's no definition of land. However, in GOST standards, Methodological Guidelines of the Ministry of Agriculture of the Russian Federation and other regulatory documents, the following definition can be found: "soil is an independent natural-historical organomineral natural body that arises on the earth's surface as a result of prolonged exposure to biotic, abiotic and anthropogenic factors, consisting of solid mineral and organic particles, water and air and having specific genetic and morphological signs and properties that create appropriate conditions for the growth and development of plants" [28]. Thus, soils can have both a natural origin (created by nature) and a natural-anthropogenic origin (restored by man, improved by man), and are also capable of performing various functions (ecological, socio-economic, sanitary and hygienic, and others). The most important valuable property of soil, which determines the natural value of the land, is its fertility, and this is what determines the adoption of measures for its legal protection [29]. According to Article 62 of the Federal Law "On Environmental Protection", rare or endangered soils are subject to special protection. Land, being a natural object and a natural resource, is a primary element in the system of ecological interrelations, which together with other components of the natural environment provides favorable conditions for the existence of life on our planet, determines the mode of life of human society, thereby performs an ecological function (GOST 26640-85 "Land. Terms and definitions" was adopted by the resolution of the USSR State Committee on Standards in 1985, according to paragraph 1 of which land is an important part of the natural environment, characterized by space, relief, climate, soil cover, vegetation, subsoil, waters; which is the main means of production in agriculture and forestry, as well as the spatial basis for placement of enterprises and organizations of all sectors of the national economy; however, since April 2021, the specified GOST has been replaced by GOST R 59055-2020 "Environmental protection. Land. Terms and definitions", according to which land is a significant area in which different types of soils can be represented, but having a specific economic purpose (agricultural, recreational, forest management, etc.) [23, 30].

In the process of fulfilling the socio-economic function, land acts as a territorial and spatial basis for the placement of objects, means of production in agriculture and forestry. Land is an indestructible, irreplaceable natural object and resource which is geographically limited in space,

has the ability to self-repair, and is also characterized by a constant location. The existence of land as an object of protection is not related to the presence or absence of a fertile soil layer, since, unlike the soil layer, it cannot be destroyed. Both mean the surface that a person uses in the course of their economic and other activities. However, the presence or absence of a fertile soil layer presupposes various legal possibilities for the use of land plots, determines the legal regime (for example, for especially valuable agricultural land). Specialists of natural sciences have introduced the term "urban soils" (equivalent to the term "soils in the city"), which refers to anthropogenic modified soils having a surface layer with a thickness of more than 50 cm created as a result of human activity, obtained by various methods (mixing, burial, pouring, contamination of material of urban origin, including construction and household garbage) [31]. Such soils, which usually prevail in cities, have the characteristics of a natural and anthropogenic object. These also include those that are artificially created, but are located in an open space. On the other hand, in cities there may be soils that are a natural component of the natural environment, which have preserved their natural origin in certain areas of the territory in the city (for example, in urban forests, specially protected natural areas, recreational areas, etc.).

The use of land and soil in cities inevitably leads to their negative changes. The most common anthropogenic impacts on soils in the city include organoprofile depletion, destruction and disturbance of the soil profile, overcompaction, violation of water-air, thermal and gas regimes, changes in acidity, chemical and biological pollution, salinization, decrease in biological productivity and reduction of biodiversity [32]. The main factors polluting land and soils in cities include an increase in the amount of waste generation, including municipal solid waste, emissions from enterprises of various industries, an increase in the number of vehicles, the unsatisfactory condition of sewer networks, garbage collection sites, pet walking, low effectiveness of measures to reduce the number of synanthropic animals. These factors include the economic and other activities of land rights holders, whose non-fulfillment or improper fulfillment of obligations when using land leads to changes in the condition of land plots. It is advisable to provide legislative standards for soil quality and permissible anthropogenic load on soils in cities, including the ones related to soil sealing; program measures for the protection of lands and soils, including the ones related to improve the condition of lands and soils within the framework of urban landscaping, soil monitoring, the introduction of a compensation system for the restoration and improvement of soil conditions to persons whose actions have led to deterioration of the soil condition (for example, when sealing soils not in accordance with land pollution regulations). It is necessary to specify the legal norms of paragraph 2 of Article 44 of the Federal Law "On Environmental Protection" on land reclamation in cities, extending them to urban soils (also providing for the possibility of using artificially created soil) [23]. Rational use of land in cities, reduction of anthropogenic load on them can be ensured by improving the settlement system and socio-economic development of territories adjacent to cities while respecting the requirements of environmental protection, a flexible system to stimulate the outflow of urban population to the suburbs, to rural areas by creating jobs outside urban areas, the development of social,

transport and other infrastructure, state regulation of tariffs and prices for various kinds of goods, works and services outside cities, activation of the process of providing land plots outside urban settlements. Unfortunately, these processes are not regulated in the existing strategic documents for the socio-economic development of cities, programs for the protection of lands and soils. However, in the context of the creation of urban agglomerations, the tasks of improving the settlement system and the territorial organization of the economy are outlined by the Spatial Development Strategy of the Russian Federation Until 2025 [33].

The unification of existing legal requirements and the development of new requirements for the protection of lands and soils in urban conditions could ensure a sufficient degree of their legal specification, transparency and consistency of measures for their protection, identify the circle of persons responsible for meeting these requirements and implementing appropriate measures. At the level of the subjects of the Russian Federation, it is advisable to detail the provisions on soil protection in cities taking into account the ecological state of the territory, economic, social, natural-geographical and other conditions. The improvement of the condition of lands and soils should be considered as an element of management in the field of environmental protection in the city, which determines the favorable state of both the natural and socio-anthropogenic components of the environment in it. The land legislation lacks a systematic approach to the protection of lands and soils, regardless of the rights of a particular subject of the right to a land plot, and has not developed a comprehensive system of measures aimed at protecting them as a necessary condition for ensuring an ecologically favorable state of the urban environment. In our opinion, this is due to the attitude towards land as performing only the function of a territorial and spatial basis for the placement of industrial, residential, administrative and other facilities, the rejection of the importance of land and soils as a component of the natural environment in urban conditions and, as a result, ignoring existing environmental requirements in the implementation of economic and other activities. The recognition of urban soils as an independent object of legal protection will expand the environmental requirements for the protection of lands and soils in cities. It is advisable to increase the importance of land as a natural object and resource through the greening of legislation on urban development. In modern legal conditions, the assessment of impact on the environment and its components, including soils, during the development and examination of project documentation is performative, while territorial planning documents are not the object of environmental expertise. When performing the accounting and registration function, the ecological state of soils is not taken into account and their qualitative characteristics are not included in the Unified State Register of Real Estate.

At the same time, the ecological state of soils depending on the ability of self-restoration and the level of harmlessness to other components of the natural environment and human health in the city, reflects the suitability of land use in economic and other activities in the city, taking into account the level of pollution and should be considered when determining the types of permitted use of land plots and when providing them, as well as when establishing restrictions on the rights of persons using land plots, or special obligations to improve the condition of soils.

Standards characterizing the state of soils in the city should be developed and established on the basis of and taking into account the total anthropogenic impact on the environment in cities and depend on local environmental conditions and the level of morbidity of the population. Soil protection should also be carried out through the protection of other components of the natural environment in the city, including reducing unauthorized pollution.

4. Conclusions

Environmental regulation remains the main legal instrument aimed at protecting land and soils from pollution. The recognition of urban soils as an independent object of legal protection will expand the environmental requirements for the protection of land and soils in cities.

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during the development and examination of project documentation is performative, while territorial planning documents are not the object of environmental expertise. When performing the accounting and registration function, the ecological state of soils is not taken into account and their qualitative characteristics are not included in the Unified State Register of Real Estate. The elimination of the above-mentioned problems will significantly improve the legal regulation of the protection of the objects in question, which in the future should lead to the normalization of the environmental situation in the country and, as a result, globally.

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