



El derecho de uso del subsuelo en Rusia: desde sus orígenes hasta nuestros días

ASubsoil use rights in Russia: from origins to modern times

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Resumen

El artículo está dedicado a analizar el derecho de uso del subsuelo en Rusia, desde sus orígenes hasta nuestros días. El autor lleva a cabo un análisis de la legislación que regula la formación, la modificación y la terminación del derecho de uso del subsuelo, así como de la literatura científica y los procedimientos de aplicación establecidos, identificando los problemas actuales y proponiendo formas de resolverlos. La base del estudio se encuentra constituida por documentos oficiales expedidos por los órganos autorizados para supervisar las actividades de los usuarios del subsuelo, los proyectos de ley, los laudos de arbitraje judicial, así como la práctica de concesión de licencias, entre otros. La base jurídica del trabajo la conforman leyes y actos administrativos de la Rusia prerrevolucionaria, la URSS, la Federación de Rusia, las entidades constitutivas de la Federación de Rusia y la legislación internacional relativa a la regulación del uso del subsuelo.

Palabras clave: derecho de uso del subsuelo, subsuelo, extracción minera, minería, licencia minera.

Abstract

The article considers subsoil use rights in Russia, starting from their origins and ending with modern problems. The authors conduct a comprehensive analysis of laws governing the formation, alteration, and termination of subsoil use rights, as well as the relevant scientific literature and law enforcement practice on this issue, identifying several urgent issues and suggesting ways to solve them. The study is based on the work of authorized bodies that control the activities of subsoil users, discussion of draft laws, generalization of modern judicial and arbitration practice, licensing, and other materials. The regulatory framework was formed by laws and other legal acts of pre-revolutionary Russia, the USSR, the Russian Federation, and constituent entities of the Russian Federation and international legislation regulating subsoil use relations.

Keywords: subsoil use rights, subsoil resources, patented mining claim, mineral extraction, miner's license.

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I. INTRODUCTION

It is hard to overestimate the importance of mineral resources for developing the political, economic, and industrial potential of any country. The issues of effective management in this area are always relevant both in Russia and other countries (Hutahayan et al., 2020; Makhmudova & Matsui, 2019; Ptak & Kazmierczak, 2019; Vachtlová et al., 2019). Although subsoil resources are exhaustible and limited, the projected total volume of additional oil and gas revenues of the Russian federal budget is 702,650,667 thousand rubles for 2022 in accordance with draft Federal Law No. 1027743-7 "On the Federal Budget for 2021 and for the Planning Period of 2022 and 2023". The efficient use of subsoil and mineral resources determines the attraction of foreign direct investment. Currently, there is a steady trend in Russia to increase the number of disputes considered by arbitration courts related to the invalidation of tenders in the field of subsoil use, licensing disputes, and disputes over certain issues related to subsoil rights. All these factors predetermine the need to develop legal tools capable of providing favorable and stable conditions for investing funds in the development of subsoil plots (Sagynbekova et al., 2018).

II. METHODS

We used the systematic approach as a method that presupposes the element-by-element structuring of the phenomenon under study in the context of the functional interaction and the relationship of its elements since we regarded it as the most effective way to identify problems and set tasks. Combined with comparative and content analysis, this method allowed us to reveal common and distinctive features of individual elements. The historical method enabled us to consider the formation of the legislative framework for governing relations in the field of subsoil use.

We resorted to the synthesis and analysis of legislation, theory, and judicial practice. The logical method was used to form reasoning based on the premises available in the current legislation and special literature. The following interpretation techniques were used: grammatical, systematic, and functional.

Historical prerequisites for the legal regulation of subsoil use

In 382, a decree was adopted which allowed running mines in neighboring land plots, paying the owner a regular income – one-tenth of the raw materials mined (Muromtsev, 1883). The legal acts of Ancient Rome mention the term "canon metallicus", which is defined by modern researchers of the Roman law as a rent income from mines or mining plants (Dydynskii, 1896). Starting from 300 AD, subsoil plots could be transferred based on a special property right close to *ius emphyteutium*, with the obligation to pay a certain amount of money to the owner (canon, pencio, redditum). Being *jura in re aliena* (encumbrances), the law itself referred to special property rights. According to Ulpian, they belonged to *res mancipi*, i.e. a special category of property (Shtaerman, 1998).

A rural easement (*servitus praediorum rusticorum*) was a variety of a *praedial easement*, which, in contrast to an urban easement, was used for agricultural purposes, including mining. Another variety was the right to extract lime, sand, stone, and other minerals from a subordinate plot (*servitus praediorum calcis coquendae, lapidis eximendi, arenae fodiendae*) (Dernburg, 1905).

The Russian sources of feudal law comprised Short *Pravda* and Extensive Russian *Pravda*, which at one time were influenced by the Byzantine Canonical Collections (Nomocanon or Kórmchaia Book, *Ecloga* and *Prokhliron*, *Zakón Súdnyi Liúdem* ("Law for Judging the People")) (The Complete Edition of Russian Chronicles, 1908; The Novgorod First Chronicle: Major and Minor Versions, 1950). Back then, the function of land appropriation coincided with the function of appropriation of mineral resources. For example, metal was extracted from the Chud pits of the Urals and Siberia. The Chud pits are a collective name for ancient ore workings, whose first traces were found in the Minusinsk Hollow, Western Siberia, and the Urals in the 1st half of the 3rd millennium BC (Eikhvald, 1856; Khabakov, 1950; Levitskii, 1941). The Russian mining industry formed and developed between the 15th and 16th centuries. Subsoil rights began to be transferred based on state permits in the form of the granted mining rights. They could be inherited and provided their owner with the opportunity to physically affect the other's plot. These rights worked in such a way that the "search for ore" was allowed on anyone's land.

The early 18th century was characterized by the consolidation of private land tenure, the merge of estates and manors, which was enshrined in the Decree "On the procedure for inheritance in movable and immovable property" of March 23, 1714. The right to own subsoil plots which were part of estates and man-

ors and manage industrial enterprises by the upper merchant class (the so-called "guests") was secured by the nominal letters of grant signed by the tsar himself (The Russian Legislation of the 10th-20th Centuries in Nine Volumes, 1984).

In 1719, the Mountain Manifesto, known as the Berg-Privilege of Peter I, was adopted. It secured the right to unhindered search for minerals on any land (the freedom of mining), the principle of equal access to the examination and use of subsoil (Article 1), and the permissive procedure for obtaining subsoil rights from the monarch in the form of mountain regalia (Article 11). The law guaranteed the protection of hereditary property for developed mines and production facilities, as well as determined the main features of subsoil plots (mining) as separate objects of law. Catherine II issued the Manifesto of June 28, 1782 that abolished the freedom of mining on private land and limited it on state-owned land plots since the owner's interests came into conflict with the interests of subsoil users and the state resolved this contradiction in favor of the owners. After the adoption of the Mining Charter of 1893, the codified collection of all laws related to the mining industry was included in Volume 7 of the Code of Laws of the Russian Empire of 1857. It was based on the Mining Regulations Project approved on July 13, 1806 (Complete Collection of Laws of the Russian Empire, vol. 5, 29; Collection of Laws of the Russian Empire, 1910).

At the beginning of the 20th century, the level of legal regulation allowed creating and expanding new mining industries. All legal conditions were created for the development of mining. The recognition of private property for the Russian mining business was of greater importance than the abolition of serfdom but subsoil use rights merged with the owner's rights to the land surface and spread inland, below the surface.

The Mining Charter (Articles 206-213) prohibited the exploration of ores on foreign lands without the permission of the owners of these lands, leaving the landowner free to develop or "leave in vain" the mines on their land. According to Article 403 of Volume 10 of Part 1 of the Code of Laws of the Russian Empire, the right of gold miners to mines belonged to movable property (Complete Collection of Laws of the Russian Empire, 1912).

After the Russian Revolution of 1917, subsoil was provided only based on a concession. According to Clause 4 of the Decree of the Council of People's Commissars of November 23, 1920 "On General Economic and Legal Conditions of Concessions", the rights granted to concessionaires in the field of mining were exclusive due to the fact that the property of concessionaires (as a rule, foreign persons) was exempted from general laws, i.e. was not subject to nationalization, requisition, and confiscation. This document also enabled unhindered export of the concessionaire's share of raw materials and kept contractual terms unchanged (Clause 6) (RSFSR. Sobranie Uzakonenii). However, the very idea of a concession contradicted the Soviet law and the political foundations of the Soviet state. Therefore, the institute of concessions was liquidated by the Soviet state unilaterally after the death of V.I. Lenin in 1924.

The basic principle of subsoil use in the USSR was the state ownership of subsoil which operated throughout the entire territory of the state without exception. Following the Regulations of the Central Executive Committee of the RSFSR of July 7, 1923 "On the bowels of the earth and their development", the Central Executive Committee and the Council of People's Commissars of the USSR adopted the Mountain Regulation of the USSR on November 9, 1927. This document retained some principles of the pre-revolutionary legislation, including civil institutions for the assignment and pledge of subsoil use rights. On July 9, 1975, the Decree of the Presidium of the Supreme Soviet of the USSR established the Fundamental Principles of the Legislation of the USSR and the Republics of the Soviet Union on Subsoil. Between 1976 and 1977, the subsequent codes on subsoil were adopted in the Republics based on the above-mentioned Fundamental Principles. Subsoil use rights reflected the specifics of the Soviet regime. They were subject to the requirements of a planned economy expressed in the establishment of specific goals for the use of subsoil in each land plot, while subsoil use rights were reduced to the most rational and comprehensive development of deposits.

As a result of historical- and legal-comparative analysis, the following periods can be identified: 1. the 11th-15th centuries – the initial "objectless" period. Its typical feature was that subsoil use rights constituted a single whole with legal titles to land "with mines"; 2. the 16th-18th centuries – the period of "mountain freedom" (mountain regalia) when mining was carried out in the form of mountain freedom (mountain regalia) on certain land plots; 3. from the 20th century to the present day (modern stage) – the period when the state ownership of subsoil was finally enshrined in the relevant legislation.

The genesis of subsoil use rights leads to the conclusion about the gradual development of the approach to such rights as a special *jus in re*, i.e. rights to value and foundations of the country's welfare: from a constituent part of land to gradual recognition as an independent object of law.

Subsoil use rights: acute issues at the present stage

In 1992, Federal Law of the Russian Federation No. 2395-1 "On Subsoil" (as amended on December 8, 2020 by Federal Law No. 429 FZ) was adopted and completely changed the system of subsoil use, i.e. a licensing regime was established that combines both private and public law principles. The licensing procedure for granting subsoil use rights served as an improved form of the licensing system for subsoil use. Article 1.2 of the Federal Law of the Russian Federation "On Subsoil" refers to the issues of ownership, use, and disposal of subsoil to the joint jurisdiction of the Russian Federation and its constituent entities (regions). Subsoil resources belong to real estate but their turnover is significantly limited. However, minerals and other resources extracted from subsoil might be federal state property, property of the constituent entities of the Russian Federation, and municipal and private property. Therefore, their turnover is not limited. Subsoil use rights are granted in two forms: licenses in accordance with Article 11 of the Federal Law of the Russian Federation "On Subsoil" or production sharing agreements. In the latter case, a license for the use of subsoil (mining license) is also issued but it certifies the fact of acquiring the right *ex post facto*.

The system of production sharing agreements established by Federal Law No. 225-FZ of December 30, 1995 "On Production Sharing Agreements" is an alternative to the existing licensing system since it provides subsoil based on an agreement concluded between the investor and the state. The Federal Law "On Production Sharing Agreements" formed a whole system of legal guarantees protecting the interests of foreign investors and ensuring their benefits. However, there are several problems. They are associated with the prevalence of administrative-legal methods and public law principles in the current legislation. For this reason, production sharing agreements are practically not concluded and are not applied in Russia.

It is necessary to gradually exclude these administrative-legal methods and eliminate cumbersome procedures for concluding production sharing agreements. To this end, we propose to amend Federal Law of December 30, 1995 No. 225-FZ "On Production Sharing Agreements" and exclude the mandatory adoption of a federal law to launch each production sharing agreement. The adoption of a separate federal law on subsoil, the right to use which can be granted under the terms of production sharing in relation to a specific field, and the further approval of practically all production sharing agreements by government acts of the Russian Federation unnecessarily complicates the procedure for granting subsoil plots for use and inhibits the development of investment relations in this sphere.

It is the main factor that facilitates foreign investments into the country aimed at finding and exploring mineral deposits. We believe that it is sufficient to develop a single list of the relevant subsoil areas, the right to use which can be granted based on production sharing, and to adopt such a list through the Resolution of the Government of the Russian Federation. We propose to present Clause 3 of Article 2 of Federal Law of December 30, 1995 No. 225-FZ "On Production Sharing Agreements" in the following edition:

"3. Lists of subsoil areas subject to potential use under production sharing terms in compliance with the provisions of this Federal Law shall be established by the Resolution of the Government of the Russian Federation".

The next problem is licensing when concluding production sharing agreements. The need to formalize the licensed transfer of subsoil plots under production-sharing agreements that certify *ex post facto* rights to use the specified subsoil plot further complicates the difficult procedure for transferring subsoil use rights to the investor.

It seems that the legislator does not consider the aleatory (risky) nature of relations with the participation of a foreign investor. According to Clause 1 of Article 2 of Federal Law No. 225-FZ "On Production Sharing Agreements", investors carry out the work at their own expense and risk. Consequently, the implementation of work that is risky for investors indicates its aleatory nature. This requires legislative support for the fair distribution of risks with due regard to the legal status of the involved economic entity.

Thus, the existence of such a traditional administrative and legal institution as licensing, based on the power relations of subordination, is not suitable for production sharing agreements which imply equality and coordination (Article 124 of the Civil Code of the Russian Federation). This increases the risks of the second party, namely, a foreign investor. We propose to exclude the compulsory licensing of subsoil use under the terms of production sharing agreements.

For these purposes, we propose to present Clause 2 of Article 4 of Federal Law of December 30, 1995 No. 225-FZ "On Production Sharing Agreements" in the following edition: "A subsoil area shall be granted for

use to an investor under the terms and conditions of the agreement. In this respect, the license for the use of the subsoil area, which certifies the right to use the subsoil area provided for in the agreement, shall not be granted to the investor. The transfer of subsoil plots is considered complete from the date of signing the production sharing agreement".

On the one hand, the specifics of the Russian law on subsoil as a legal category are conditioned by the characteristics of subsoil as a national treasure. On the other hand, Article 130 of the Civil Code of the Russian Federation classifies subsoil plots as immovable property, i.e. objects of civil law. Thus, subsoil use rights are dichotomous since they imply the right to a special kind of property and the possibility of exercising some powers affecting public interests. These are exclusive subsoil use rights exempted from the general order that serve as the basis for the well-being of the country and its population. From the moment of granting some subsoil plot for use, the specified component does not lose the properties and characteristics inherent in the subsoil itself and transforms into the legal regime of an individualized mining or geological allotment. The above-mentioned feature of law is crucial as it helps to understand the legal nature of subsoil use rights.

In an objective sense, the right to use subsoil (mineral law) is an integral institute of legal norms governing property relations regarding subsoil plots as objects of civil law. It differs from mineral legislation which is a complex branch of legislation consisting of protective norms regulating certain issues of subsoil use. Subsoil legislation or mining law (a branch of legislation) determines the following aspects: 1) the procedure for acquiring, exercising, and terminating the right to use subsoil; 2) the legal status of subjects of subsoil ownership and the right to use subsoil plots; 3) forms of interaction between state authorities and subsoil users, including state control over the activities of the users associated with the protection and rational use of subsoil as the basis for the life and activities of people living in the relevant territory; 4) other relations involving subsoil users.

The Russian subjective law is understood in different ways but the most common definition is as follows: a legal measure of the possible behavior of an authorized person often associated with the theory of subjective interests developed by Rudolf von Ihering who regarded rights as "legally protected interests" (Ihering, 1874-1878). In a subjective sense, mineral rights are methods of legal fiction since subsoil use is possible only in relation to a specific subsoil plot rather than a unified subsoil fund as an object of state ownership (the boundaries of the latter are not legally defined). The owner (state) does not directly exercise the specified right. The main goal of subjective rights of a subsoil user is the indirect (limited) involvement of subsoil plots into civil relations through constitutive succession in relation to mining and geological allotments, as well as universal succession among subsoil users.

It is not limited to what was previously called *usufructus* (the use and extraction of fruits). The use of a thing (object) should presuppose that this property has certain useful properties to which the user's interest is directed and the ability of the interested subject to benefit from such useful properties. Georg Hegel defined use as a single act of taking possession (Hegel, 1990). It is controversial whether ownership is a fact or a right and we believe that subsoil use means the possession of an immovable thing (fact) based on a special legal title (right). Accordingly, subsoil use has both factual and legal aspects.

Subsoil use rights are either the user's rights (in terms of the Federal Law of the Russian Federation "On Subsoil") or the investor's rights (in terms of the Federal Law "On Production Sharing Agreements"), allowing their holders to receive useful properties from the provided subsoil plot. The right to use subsoil in accordance with the license provided assumes that any activity within the boundaries of a mining allotment can only be carried out with the consent of the subsoil user to whom it was granted (Article 7 of the Federal Law of the Russian Federation "On Subsoil"). This feature means that all third parties should refrain from violating the above-mentioned rights, which brings them closer to real rights.

This broad understanding of subjective rights to use subsoil does not distinguish between the public law regulations and requirements laid down by objective mining law and the actual legal possibilities and powers of a specific subsoil user provided by the relevant license. The prescriptions regulated by public law are the same for all users of subsoil, and the main distinctions in the scope of their property rights should be established by civil law, hence the very difference is between subjective rights of subsoil users and their public obligations for the proper use and protection of subsoil. It is necessary to amend the preamble of the Federal Law of the Russian Federation "On Subsoil" since property relations arising from the ownership, use, and disposal of subsoil plots are regulated by civil legislation unless otherwise provided by land, forest, water, subsoil, or environmental legislation, as well as special federal laws.

After the transfer of a subsoil plot to the user (investor), no one, including the state, can limit the investor's ability to use the right granted. This monopoly is conditioned by an important factor. The bowels of the earth are valuable for all peoples inhabiting the territory of Russia due to the fact that they contain minerals and are unique underground space. When the state transfers exclusive rights within the framework of a mining license, it limits its own rights and immunity. In this context, the granting of exclusive rights to use subsoil is an exception from the general legal order. Indeed, this exception characterizes exclusivity.

The object of subsoil use rights (the legal title of subsoil users rather than their rights) should be understood as the thing conditioning the exercise of such rights, i.e. a geometrized block in the form of a mining or geological allotment, whose boundaries are certified in the prescribed manner. *De lege lata* rights to a subsoil plot do not terminate rights to the adjacent land plot. When using a specific subsoil plot, both objects will be involved, in particular, a land plot and a mining (geological) allotment. As a result, there are two closely related activities (subsoil and land use). This two-object use complicates a turnover, has no positive aspects, and should be recognized as an anachronism. The simultaneous possession of a geometrized block (subsoil plot) and the adjacent object (land plot) only leads to additional costs of resources (time, financial, organizational, and other) of a subsoil user (investor). This causes several problems in terms of determining the boundary, according to which land and subsoil users (other title holders or owners) can establish the object to which their powers apply. To solve these problems under the current legal regime, we propose to proceed from the systemic connection between land plots and subsoil plots. The system priority of the related objects should depend on the specifics of the above-mentioned connection. This priority should be assigned to subsoil plots, which is explained by the social significance and specificity of its legal regime. Under *de lege ferenda*, the development of theory and practice should withdraw from two-object use.

The specific exercise of the powers of subsoil owners aims at achieving public interests. It is required to create a unified system of subjects involved in the process of subsoil use and headed by an authorized state body or organization with state participation. It might be a state non-profit organization that does not pursue profit-making goals and strives to solve certain issues.

In the course of the study, we revealed contradictions contained in the legislation on subsoil in relation to the definition of such a category as "interests". Thus, the systemic interpretation of the preamble of Federal Law of the Russian Federation of February 21, 1992 No. 2395-1 "On Subsoil" in conjunction with Article 2 and Article 5 of the law leads to the conclusion that, firstly, the legislator does not divide public interests into state and public. Secondly, there is no definition of state interests. The list of persons whose interests are protected does not include any other persons who do not own subsoil use rights, which leads to the conclusion that the state does not set the task of protecting public interests when granting subsoil for use, but proceeds only from accounting the subjects involved, which contradicts the concept of subsoil resources as the basis for the life of peoples in Russia, enshrined in the Constitution of the Russian Federation, and the interests of the state itself.

There is no form and procedure for coordinating the interests specified in Federal Law of the Russian Federation of February 21, 1992 No. 2395-1 "On Subsoil": namely, the interests of states, peoples (citizens), and subsoil users although there is the category of "interest" in the fundamental acts regulating relations on subsoil use that serves as the main criterion for distinguishing between public and private aspects.

There is also an obvious gap in terms of determining the priority of the corresponding interest in relation to the private ownership of minerals. It is necessary to supplement Federal Law of February 21, 1992 No. 2395-1 "On Subsoil" with a statement that the main interest in Article 2 is "the interest of the peoples living in the respective territories and all the peoples of the Russian Federation", i.e. a public interest. Consequently, all the state bodies involved in the field of subsoil use should be unified into a system in compliance with public interests since subsoil is the basis and heritage of Russian society.

All the powers related to "subsoil management" in one way or another characterize the general regime of property owned by the state. The fact that the state acts simultaneously as the owner of subsoil and as a sovereign only predetermines the specific exercise of powers belonging to it as the owner of subsoil. Legal tools and means of regulation must correspond to the essence of governed relations.

The main problem in this area is the fair distribution of incomes received in the process of subsoil use and the application of the most effective legal methods of subsoil fund management. We concluded that the best form of interaction between state and subsoil users is a concession. In world practice, concessions in the field of subsoil use are often applied. Currently, they exist in all countries in various legal forms: permit, lease, license, etc. Federal Law of the Russian Federation No. 115-FZ "On Concession Agreements"

does not mention subsoil resources among the objects of concession agreements, despite the fact that this mechanism allows attracting investments in the formation, development, and improvement of major state-owned facilities. Neither the general principles nor the concession mechanism provided by law excludes this. Up to the latest version of the draft Federal Law "On Concession Agreements", subsoil was among the objects of concession agreements. We propose to amend Article 4 of Federal Law of July 21, 2005 No. 115-FZ "On Concession Agreements" and supplement the list of the objects regulated by concession agreements with an indication of subsoil plots.

Subsoil-related entrepreneurial activity is an independent activity in the field of geological exploration and subsoil use, development of technologies for geological study, exploration, and production of hard-to-recover minerals, use of wastes from mining and related processing industries, special mineral resources (brine lakes and estuaries, peat, sapropel, etc.) and groundwater carried out at its own risk and aimed at earning systematic profits. While considering different viewpoints, we concluded that persons who do not have the right to use subsoil, for example, legal entities performing work on the assignments of subsoil users, cannot be classified as entities performing this type of activity.

Depending on the types of subsoil use, the following entrepreneurial activities in subsoil use can be distinguished:

- 1) Regional geological exploration activities;
- 2) Geological exploration activities;
- 3) Exploration and mining activities;
- 4) Activities aimed at developing technologies for geological study, exploration, and production of hard-to-recover minerals;
- 5) Activities aimed at constructing and operating underground structures not related to the extraction of minerals;
- 6) Activities aimed at forming specially protected geological objects having scientific, cultural, aesthetic, sanitary, and other types of significance;
- 7) Activities aimed at the collection of mineralogical, paleontological, and other geological samples.

Revealing the essential characteristics and peculiarities of entrepreneurial activity in relation to this classification allows more accurately regulating the corresponding sphere of relations.

All these types of activities are limited to a specific period or are unlimited. For a certain period, subsoil plots are provided for geological exploration (up to 10 years), underground water extraction (up to 25 years), and mining (throughout the development of a mineral deposit). Without any time limit, subsoil plots can be provided for construction and operation:

- Underground facilities not related to the extraction of minerals;
- Underground facilities associated with waste disposal;
- Oil and gas storage facilities, as well as facilities for the formation of specially protected geological objects.

The legislator's indication of the time restriction or indefinite duration of subsoil use rights is conditioned by the specifics of subsoil and the goals of providing subsoil plots. The powers of the title owner are temporary within the framework of some types of fixed-term use violating the integrity of subsoil and the consumption of mineral resources, which does not correspond to the permanent and stable nature of property rights. Real rights should enable their holder to make a lasting, uniform, and direct impact on a subsoil plot to satisfy their interests and needs. Therefore, such rights can only include those types of use rights that are not related to the exploration and production of minerals.

One more problem in this area is a ban on the state registration of rights to three-dimensional objects, including underground space. The current Russian legislation does not recognize undeveloped underground space as an independent real estate object. This approach can be useful in certain situations, for example, in the construction of underground structures to designate the protective zones of new facilities or if the work is planned on empty underground space (for the establishment of mining easements).

This hinders the goal of ensuring the optimal and efficient use of subsoil resources (Sandberg, 2004). The global experience proves that land plots with subsoil (allotments) located under them have a priority in the systemic connection of real estate objects in the legal systems of most foreign countries. However, there is a clear desire of leading countries to consider these objects as three-dimensional rather than flat. For example, the French legislation regards three-dimensional space as an object of property law (Article 552 of the French Civil Code). The Netherlands, Greece, and other countries begin to utilize advanced models of a three-dimensional real estate cadastre. Thus, Jantien E. Stoter determined the main problems of registration systems in which land plots are recognized as the only real estate object, namely:

- The insufficient information value of a register and/or cadaster that cannot display a real three-dimensional situation in the form of flat two-dimensional land plots;
- The low investment attractiveness of buildings, especially individual premises: banks prefer specific real estate objects for a collateral loan rather than a building leasehold or a part interest in joint ownership (Stoter, 2004).

While trying to solve these problems, Stoter developed three models for recording three-dimensional objects in state registries: 1) special tags that indicate a three-dimensional situation and contain an external link to documents (digital or scanned) that can clarify the actual situation on land plot; 2) a hybrid cadastre that provides that three-dimensional space is not an object of property rights but rather an object of cadastral registration, which clarifies the content of registered rights (including limited property rights) to land plots; 3) a complete three-dimensional cadastre that recognizes three-dimensional space as independent objects of property rights.

The registration systems of most countries are based on the concept of a land plot as the only possible property. According to the Roman principle of “superficies solo cedit”, all constructions above and below the surface of the plot, as well as perennial plantings and growing crops, are recognized as part of the plot. The well-known principle of “cuius est solum, eius est usque ad coelum et ad inferos” is recognized all over the world and is enshrined in the British, US, and European codes (Article 905 of the German Civil Code, Article 667 of the Swiss Civil Code, Article 552 of the French Civil Code, Article 840 of the Italian Civil Code, Article 490 of the Louisiana Civil Code). Over time, it became obvious that this principle would be an obstacle to the development of science (Logan, 2010).

When it comes to placing linear-type facilities below the surface of land plots (pipelines, underground tunnels, cable channels, etc.), a common model for continental countries, when only encumbrances of land plots are registered (parts of the above-mentioned facilities are located under or over such plots), cannot ensure the completeness and reliability of information presented in the relevant cadastre and register. Following this approach, we cannot establish the exact location of such an object either from a register or a cadastre.

In the Russian Federation, subsoil is state-owned. According to the definition contained in the preamble of the Federal Law of the Russian Federation “On Subsoil”, subsoil is part of the crust located below soil layer, and in case of its absence – below the land surface and bottom of reservoirs and water currents stretching to depths available to geological studying and development. The owner of a land plot can lower their buildings no more than 5 meter without the need to obtain a license for subsoil use (Article 19 of the Federal Law of the Russian Federation “On Subsoil”).

In conformity with the principle of “cuius est solum, eius est usque ad coelum et ad inferos”, many countries claim that subsoil belongs to the owner of a land plot and their use is mostly governed by private law. In Russia, rights and encumbrances are registered on real estate objects (buildings, structures, residential and non-residential premises, parking lots). In this case, an entry in the register has a legal nature. Being the only type of property in Russia and representing three-dimensional space in the Unified State Register of Immovable Property, subsoil plots are not taken into account (Clause 8 of Article 1 of Federal Law of July 13, 2015 No. 218-FZ “On the State Registration of Immovable Property”).

The reflection of three-dimensional reality in two-dimensional terms negatively affects the information value of state cadastres and registers both in Russia and other countries. This does not allow timely tracking overlays and, in general, undermines the credibility of the information presented in the register. If three-dimensional information about objects, including subsoil plots, is included in the cadastre, it will improve the quality of any registration system.

The last problem is that the Russian mining legislation does not consolidate a mining easement as a special real right. While conducting economic activities, subsoil users need to use adjacent mining allotments for additional work, transportation of drilling and other installations, environmental protection, etc. In this regard, the Federal Law of the Russian Federation "On Subsoil" should fix the concept of a mining easement and the essential terms of concluding an agreement on its establishment (price, term, and scope). A mining easement is the right of limited use of other's subsoil plot. Such a right can be free or compulsory. It is intended to provide access to an adjacent mining and/or geological allotment in the following cases:

- 1) When a subsoil user carries out work in a neighboring subsoil plot and needs to access a certain area within the subordinate subsoil plot, if there is evidence that this work threatens the safety of work fulfilled in the neighboring subsoil plot or might cause any other damage;
- 2) If emergency management can be done faster from a neighboring subsoil plot;
- 3) If transport, electrical and other communications in adjacent mining/geological allotments cannot be laid or operated without a mining easement.

The encumbrance of a subsoil plot with an easement does not deprive the "serving" (i.e. subordinate) user of land ownership and use rights. An easement should be established by an agreement concluded between the person requiring the establishment of such an easement and the user of an adjacent subsoil plot. If they fail to reach this agreement or discuss conditions of an easement, the further dispute should be resolved by a court at the suit of the person requiring the establishment of the easement.

The user of a subsoil plot encumbered with an easement needs to secure the right to demand from the persons in whose interests the easement is established a coherent payment for the use of the subsoil plot in question. The costs associated with the work should be reimbursed by the party receiving benefits. In addition to the easement subject to payment, it is advisable to fix other contractual terms: the specific part of an allotment to which the easement applies, possible restrictions on the use of this part encumbered with the easement, the parties' liability for the failure to comply with the terms of this agreement.

Due to the purposefulness of an easement, its subject does not have the powers to own and dispose of a neighboring allotment. Since easements grant the right of limited use, it is necessary to distinguish between this right and use rights belonging to the user of the encumbered plot, as well as from the powers of the owner of the adjacent land plot. The main difference between an easement and these rights is the limited use of other's mining allotment. Such limited use cannot affect the main activity of the user of a subordinate mining allotment and cannot serve as an independent source of profit since it aims at ensuring the needs of the holder of an easement.

III. CONCLUSIÓN

An emphasis in the dual legal regime for subsoil use with a clear predominance of public legal regulation should be shifted towards the strengthening of dispositive principles. From the viewpoint of foreign investors and other parties to civil relations, subsoil plots or rather the rights to them are not attractive for investment and sufficiently marketable.

From the standpoint of *de lege ferenda*, the existing mechanism of public law aimed at the formation, transfer, and termination of rights to subsoil plots, based on a complex legal structure, should be replaced with a contractual (private law) mechanism. A gradual introduction of the contractual forms used in the world practice between the state and the subsoil user, including in the form of concession agreements and production sharing agreements, is the best solution since their goal and purpose is to increase the inflow of foreign investments into the country.

The use of private law structures based on the coordination, discretion, equality, and autonomy of the will of the parties is especially relevant for the current legal regulation of subsoil use in Russia.

An increase in the possibilities for registering rights to certain territories should be accompanied by the active development of limited property rights. In particular, it is necessary to introduce new provisions into the Federal Law of the Russian Federation "On Subsoil" to regulate relations in the field of subsoil use through the establishment of a property right to a mining easement. It is also required to further develop the existing cadastral registration by adding three-dimensional information on real estate objects.

Conflict of interests

Authors declare no conflict of interests.

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