Legal regulation of sanitary protection zones

J Leskova

1 Russian Presidential Academy of National Economy and Public Administration, 82 Vernadsky Avenue, building 1, Moscow, 119571, Russia

E-mail: yuliyleskova@yandex.ru

Abstract. The article discusses the main issues of legal regulation of establishment of sanitary protection zones during construction of real estate for transport companies, which directly affect environmental component of transport and construction business and rights of citizens. At present, Russia has legislation establishing sanitary protection zones based on the 2000 classification of industrial facilities and requirements for limiting economic activity within the boundaries of such zones. Existing modern system of Russian legislation on sanitary protection zones is criticized for following points: 1) classification of industrial enterprises requires revision taking into account modern realities; 2) current Russian legislation does not fix the obligation of transport and construction (operating) organizations to plant greenery in sanitary protection zones (at the municipal level, this gap is not always eliminated); 3) the issue of developing common sanitary protection zones for several enterprises has not been resolved; 4) it is required to decide on the need to develop recommendations for landscaping of sanitary protection zones and develop recommendations on landscaping of sanitary zones by the entrepreneurial community (an association of builders - self-regulatory organizations). The foregoing emphasizes the need to conduct research on indicated points. The study was prepared with financial support of Russian Federal Property Fund, the project "Self-regulatory organization as a legal model for implementation and development of social entrepreneurship in the construction sector” No. 18-011-00974.

1. Introduction

According to “On September 23, 2019, Prime Minister of Russian Federation signed a decree on adoption of Paris Agreement under the United Nations Framework Convention on Climate Change by Russian Federation”. The main goal of ratification of this agreement is to improve the ecology of the whole world, reduce emissions and arrange for their cleaning, technological re-equipment of operating enterprises, equipping them with more modern treatment facilities and adapting production and construction to climate change. In this regard, the question arises: how exactly can the above mentioned goals be achieved in Russia, how can the environmental situation be improved, and what legal means are established in the current legislation? One of the ways to reduce the impact of environmental pollution is to establish sanitary protection zones around objects that have a harmful effect on the environment, as well as landscaping adjacent to the development site.

This study was conducted on the basis of a study of regulatory framework and legal regime of sanitary protection zones and identification of existing and potential potentialities for using sanitary protection zones of industrial enterprises to reduce negative impact on the environment. In addition, in the context of development of self-regulation of entrepreneurial activity, issues of coordination of activities of builders in construction of new real estate should be built by self-regulatory organizations.
based on the membership of persons carrying out construction, so that environmental pollution problems do not arise in relation to built objects. Self-regulatory organizations in the field of construction are created as an association for purposes specified in Art. 55.4 of Urban Planning Code of Russian Federation, based on the membership of persons carrying out construction, the content of which is development and approval of documents provided for by law (Article 55 of Urban Planning Code), as well as monitoring activities of members of these organizations, including monitoring compliance with internal documents of self-regulatory organizations. Thus, the regulatory function and control function will allow these organizations to carry out tasks to reduce the negative environmental impact from construction activities. Types of self-regulatory organizations in urban planning are presented in figure 1.

**Figure 1.** Types of self-regulatory organizations in urban planning.

As of January 30, 2020, the state register includes information on 222 self-regulatory organizations based on the membership of persons carrying out construction (data are available on the Nostroy website: http://nostroy.ru).

**Figure 2.** Territorial distribution of SRO.

The purpose of the work is to find ways (means) to create an optimal system of legal rules, based on the opinion of experts, entrepreneurs and specialists, and included in the set of rules binding on
entrepreneurs to reduce environmental pollution, and creation of a system of obligations for landscaping adjacent to the development areas including at the initial stages of construction of objects.

The novelty of the study lies in formulation, justification and solution of problems on environmental pollution using creation of a system of legal rules established by the business community (operating in form of a self-regulatory organization in construction industry) to reduce environmental impact, reduce emissions and clean them, and process equipping working enterprises, adapting construction activities to environmental requirements established by law.

The empirical basis of the work. The study is based on an analysis of Paris Agreement on the United Nations Framework Convention on Climate Change, which offers a more flexible mechanism for regulating the effects on the ozone layer. In addition, the study is based on the study of requirements of Russian laws and by-laws and regulations, including SANPiN 2.2.1 / 2.1.1.1200-03. In accordance with SanPiN 2.2.1 / 2.1.1.1200-03 “Sanitary protection zones and sanitary classification of enterprises, structures and other objects” [1] (hereinafter - SanPiN) five hazard classes are established for existing and planned for construction of industrial facilities and production, which are sources of harmful effects on the outside world. The paper shows shortcomings of specified normative act, including the lack of requirements on the need for landscaping of sanitary protection zones. Among the normative acts, the norms of the Town Planning Code as a basic law fixing the issues of greening sanitary protection zones have been analyzed. In addition, on the basis of norms of the Town Planning Code of Russian Federation, the development efficiency of elements of self-regulation of construction activities taking into account functionality of self-regulatory organizations is shown to address a number of stated issues on greening of sanitary protection zones and greening of territories around buildings.

Empirical basis consists of acts of municipalities on establishment of requirements for greening of sanitary protection zones (Moscow, St. Petersburg, Kirovsk, Vologda).

An appeal to the model environmental code for CIS member states (general part) [2] also made it possible to define the concept of a sanitary protection zone - this is a green area.

Research methods: dialectic method, methods of analysis and synthesis, induction and deduction, comparison and generalization. Formal legal approach revealed the significance of legal norms aimed at revealing potential use of sanitary protection zones to achieve environmental goals.

2. Methods

The purpose of the article is to address issues related to creation of a unified system of recommendations for landscaping sanitary protection zones and development of projects for unified sanitary protection zones within self-regulatory organizations (SRO), to justify the need to include the development of mandatory requirements for developers to plant greenery adjacent to the object territory development as one of the functions of SRO in the construction industry. Solving the issue in this vein will reduce the impact of pollution on atmospheric air and improve the environment.

The methodological basis of the study includes: dialectical method, methods of analysis and synthesis, induction and deduction, comparison and generalization. Formal legal approach revealed the significance of legal norms aimed at revealing potentialities of using sanitary protection zones to achieve environmental goals.

3. Discussion

The lack of necessary legislative requirements of law on sanitary protection zones and rules for landscaping during construction currently allows many scientists to propose ways to solve these problems. Many scientists draw attention to the fact that current sanitary classification of industrial enterprises has a positive effect on assessing the impact of these enterprises on the environmental situation, but it was created in Russia based on the level of development of technologies characteristic of the middle of last century. Using more modern technologies can significantly reduce harmful effects of enterprise and adjust the size of SPZ (Scherbo A.P., Kiselev A.V., Belkin A.S. [3]).
addition, according to E.V. Luneva, in the development of SPZ it is necessary to take into account the assimilation potential of the environment [4].

As T.E. Bobkov mentions, when establishing a single SPZ, first of all, the problem of organizational order arises: who is the initiator of the SPZ organization, how is the general SPZ project being developed, how is the share of the negative impact on the environment of each facility taken into account and what is the degree of material participation of each operating organization in this process [5, p. 14]. It seems that the main motivation of operating organizations to create a single SPZ may be to reduce its size and share the costs of its improvement with other enterprises. The initiator of establishment of a single SPZ can be both local government bodies (Vekovshinina S.A., May I.V., Sedusova E.V., Shaidurova E.S. [6, p. 118]), and self-regulatory organizations created in construction industry, as well as industry, within the framework of which it is possible to develop a procedure for coordinating a unified sanitary protection zone. In our opinion, when establishing minimum requirements for sanitary protection zones, it is necessary to green at least the industrial site and the territory immediately adjacent to it.

It is worth agreeing with the opinion of E. K. Trutnev that “sanitary protection zones should become one of the mechanisms encouraging right holders of industrial real estate to improve technologies for the sake of reducing sanitary protection zones” [7, p. 21]. However, the proposal of D. Nekreostyanov and M. Obolenskaya to protect the rights to the land plot by initiating the reduction of sanitary protection zones in court appears to be controversial [8, p. 63]. We believe that changing the size of sanitary protection zones should be carried out only on the basis of existing technological and economic capabilities of operating organization while ensuring achievement of environmental indicators, and not guided solely by the tasks of preserving the land rights of other right holders.

4. Results
It should be noted that the construction industry is gaining pace every year on the construction of new real estate. Figure 3 presents indicators of the volume of work on construction in the subjects of Central Federal District in 2019.

The volume of work performed by type of activity “construction” in January-September 2019 in the subjects of Central Federal District

![Pie chart](image)

- Tula Region, 3%
- Yaroslavl Region, 2%
- Tver Region, 1%
- Tambov Region, 1%
- Moscow city, 42%
- Belgorod region, 5%
- Bryansk region, 1%
- Vladimir region, 2%
- Voronezh region, 6%
- Ivanovo region, 1%
- Kaluga region, 2%
- Kostroma region, 1%
- Kursk region, 3%
- Lipetsk region, 3%
- Moscow region, 21%
- Oryol Region, 1%
- Ryazan region, 3%
- Smolensk region, 1%

**Figure 3.** Indicators of the volume of work on construction in the subjects of Central Federal District in 2019.
Despite the huge volume of construction work, the issue of sanitary protection zones during construction and landscaping remains unresolved by developers of objects adjacent to the construction.

As previously indicated, in accordance with SanPiN 2.2.1 / 2.1.1.1200-03 “Sanitary Protection Zones and Sanitary Classification of Enterprises, Structures and Other Objects”, five hazard classes are established for existing and planned sources of industrial facilities and production facilities harmful effects on the outside world. In addition, SanPiN contains general requirements for the size of the SPZ depending on the hazard class of the enterprise (from 1000 m to 50 m) and requirements for the regime of territory of the SPZ. At the border and outside the SPZ, the level of exposure to adverse factors must comply with sanitary and hygienic standards. A special regime for implementation of economic and other activities is established in the territories of SPZ. SanPiN provides that it is not allowed to place certain types of objects in the sanitary protection zone, and, what is especially important, to include residential buildings, and it is allowed to place other types.

The size and regime of SPZ of an individual facility are specified by the right holder of industrial facility as follows:
- hazard class of the enterprise and its approximate SPZ are determined (according to SanPiN from 1000 to 50 m),
- based on the calculations of emissions, taking into account their dispersion, the estimated SPZ is established (the size may differ from the established in SanPiN),
- The final size of SPZ is calculated after environmental monitoring at the border of SPZ.

After that, the project is subject to sanitary and epidemiological expertise and decision on its approval by the Rospotrebnadzor. Responsibility for an unidentified SPZ is not directly provided, but within the framework of Art. 6.3 and 8.1 of Administrative Offenses Code of Russian Federation, an enterprise may be fined for violation of applicable sanitary rules and non-compliance with environmental requirements when operating capital construction facilities.

As correctly pointed out by I.A. Ignatiev, currently there are two procedures for determining the legal regime of SPZ - in SanPiN. This situation developed after the adoption of Federal Law dated 03.08.2018 No. 342 “On Amendments to the Town Planning Code of Russian Federation and Certain Legislative Acts of Russian Federation”, which established general procedure for existence of zones with special conditions for the use of territories. I.A. Ignatieva concludes that “SanPiN on sanitary protection zones continues to be an act that regulates in more detail the procedure for creating, changing sanitary protection zones, establishing its borders, conducting the necessary research ... The Rules on this background set out more structurally the system of requirements for the sanitary design - protection zones, the procedure for creating and approving a project is described in detail.”[9, p. 318-319].

Despite the legal regulation, ecological potential of sanitary protection zones is not fully disclosed. Abolition in March 2008 of the SanPiN requirements for landscaping sanitary protection needs to be revised.

Foreign experience shows that having close dimensions to Russian SPZ (in Europe up to 500m, in Canada from 20m to 1000m, in Australia from 300m to 2000m), the barrier areas are subject to mandatory landscaping [10, p. 34]). According to Art. 1 Model Environmental Code for the CIS member states (general part) SPZ is a green area.

We have to admit that landscaping of SPZ has moved from sanitary-environmental legislation to urban planning. So, according to the Federal Law of 06.10.2003 No. 131 “On General Principles of Organization of Local Self-Government in Russian Federation”, organization of landscaping and gardening of territory of municipalities refers to issues of local importance. In order to implement such tasks, municipalities develop and approve the rules for improving their territories or display them in urban planning documents. At the same time, they should be guided by GOST 28329-89 “Gardening of cities. Terms and definitions” and SP 42.13330.2016. "Set of rules. Town-planning. Planning and development of urban and rural settlements. Updated edition of SNiP 2.07.01-89. ” According to SP 42.13330.2016, in cities where enterprises with a SPZ of more than 1 km are located, the level of
greening of territory must be increased by at least 15%. It should be noted that sanitary-protective landscaping also has a masking function, closing industrial sites [11, p. 25] and improving aesthetic perception of the city.

In pursuance of these requirements, individual municipalities (for example, Moscow (Decree of the Government of Moscow of 06.08.2002 No. 623-P), St. Petersburg (Law of St. Petersburg of 12.22.2005 No. 728-99 “On General Plan of St. Petersburg), Kirovsk (Order of the Committee on Architecture and Urban Planning of Leningrad Region dated December 19, 2018 No. 71)), Vologda (Decision of Vologda City Council on June 26, 2009 No. 72) establish requirements for the greening of sanitary protection zones as a percentage of their area and requirements for improvement of SPZ. Thus, some municipalities have realized the potentiality of normatively providing for greening of territory of sanitary protection zones.

At the same time, organizations operating industrial facilities are difficult to oblige to maintain sanitary protection zones in good condition, since they do not have any land rights within it. On the one hand, this reduces financial burden of operating organizations, and on the other, it deprives supervisors of opportunity to hold such organizations accountable for failure to meet the requirements for landscaping of sanitary protection zones and does not allow stimulating industrial facilities to reduce the size of sanitary protection zones.

It should be borne in mind that the effective exploitation of perennial green spaces with their competent species selection can reach 35–40 years [12, p. 3], which means the projected operation of an industrial facility for such a long period and maintenance of green spaces within the boundaries of sanitary protection zones.

However, in addition to the costs of landscaping the sanitary protection zones themselves, the operating organization bears expenses for uprooting trees and shrubs after they have withered and cannot reflect green spaces in the sanitary protection zones as its own tangible asset. In such circumstances, it is necessary to normatively provide for some form of compensation for the cost of landscaping sanitary protection zones: a depreciation bonus [12, p. 5], reduction of income tax, reduction of environmental payments, allocation of funds to maintain green spaces in proper form.

In addition, its involvement in economic circulation can stimulate the maintenance of sanitary protection zones in proper form. So, on the territory of sanitary protection zones, one can place objects whose operation do not contradict the regime of sanitary protection zones and will allow to derive income from their use: organization and placement of paid parking lots, payment terminals, ATMs, advertising structures, dry closets, warehouses and trade pavilions and others. In this case, interest in maintaining the sanitary protection zones in the appropriate form arises among public authorities that own land within the boundaries of such zones.

In addition to regional and local legislation, it is possible to improve the regime of sanitary protection zones through the rules and recommendations developed within the framework of self-regulatory organizations operating industrial facilities. They may relate to the accounting for green spaces in the sanitary protection zones, the choice of planting type, shrubs and trees, types of landscaping elements; development of internal division of sanitary protection zones into subzones for landscaping and construction and operation of other facilities, minimizing operating costs and rationalizing the budget of sanitary protection zones. It should be especially noted that such requirements should take place in the rules and standards of self-regulatory organizations in the field of construction and relate to its members - developers of real estate. Responsibility of members, including obligations related to greening of territories, is ensured by two ways of ensuring property liability of a self-regulatory organization (Figure 4).
As of February 6, 2020, the number of SROs that accepted internal documents on insurance by members of SROs of liability risk that may occur in case of damage due to deficiencies in work that affect the safety of capital construction facilities is 170 organizations, and the number of SROs that have accepted internal documents on liability risk insurance for violation by SRO members of terms of the contract for engineering surveys, for preparation of design documentation, construction contract - 75 organizations (information available on the website: http://nostroy.ru.).

As of February 5, 2020, the total amount of compensation funds placed in special bank accounts is 98.4 billion rubles. The total amount of compensation funds, according to data from SRO websites, is –101.6 billion rubles (information is available on the Nostroy website: http://nostroy.ru.).

5. Conclusion
It should be concluded that protecting the population by distance is a thing of the past: the widening gap between industrial and residential areas should be replaced by environmentally friendly production and construction technologies. Sanitary protection zones remain an important way to ensure a favorable environment and, if properly modernized, can be used along with the use of technological means in production. It seems true:
- at the federal level, it is necessary to revise the classification of industrial facilities and general requirements for the size of their sanitary protection zones;
- at the regional and local level, it is worth to provide for the obligation to plant greenery on the territories of sanitary protection zones and fix the compensation mechanism for the costs of such planting;

Figure 4. Two ways of ensuring property liability of a self-regulatory organization.
It is necessary to develop recommendations on the greening of sanitary protection zones and establishment of unified sanitary protection zones within the framework of self-regulatory organizations.

Acknowledgments
The reported study was funded by RFBR, project number 18-011-00974.

References
[1] “On the entry into force of “Sanitary Rules for Organization of Freight Transportation by Rail. SP 2.5.1250-03”: Resolution of the Chief State Sanitary Doctor of Russian Federation of 04.04.2003 No. 32 (as amended by the Ministry of Justice of Russian Federation of 11.04.2003 No. 4412) RG, No. 101, 05/29/2003 Resolution
[2] 2000 Model Law. Adopted at the Fifteenth Plenary Session of Inter-Parliamentary Assembly of the CIS Member States Resolution N 15-6
[3] Scherbo A P, Kiselev A V, Belkin A S 2010 Bulletin of the North-West State Medical University named after I.I. Mechnikov 1 50
[4] Luneva E V 2017 Lawyer 11 30
[5] Bobkova T E 2009 ZNiSO 6 14
[6] Vekovshinina S A, May I V, Sedusova E V, Shaidurova E S 2014 Bulletin of KazNMU 3-1 118
[7] Trutnev E K 2019 Property relations in Russian Federation 6 20
[8] Nekrestyanov D, Obolenskaya M 2015 Corporate Lawyer 6 60
[9] Ignatyev I A 2019 The use of land and land plots with electric power facilities: law and practice: a training manual (Moscow) p 368
[10] Weslyne A 2008 Journal of Industrial Ecology 12(1) 34
[11] Agafonova G V, Agafonova A L, Atkina L I, Osipov I V 2008 Vestnik MGUL, Lesnoy vestnik 3 24
[12] Krupina N N 2014 Financial analytics: problems and solutions 1 2
[13] Izvin D, Lez’Er V, Kopytova A 2018 MATEC Web of Conferences 170 01065 DOI: 10.1051/matecconf/201817001065
[14] Kopytova A 2017 MATEC Web of Conferences 106 08056 DOI: 10.1051/matecconf/201710608056
[15] Lez’Er V, Semerianova N, Kopytova A, Truntsevsky Y 2019 E3S Web of Conferences 110 02093 DOI: 10.1051/e3sconf/201911002093
[16] Kopytova A V, Zotkina N S, Reshetnikova I G 2018 MATEC Web of Conferences 239 04012 DOI: 10.1051/matecconf/201823904012
[17] Semeryanova N, Fedorenko O, Kopytova A 2018 MATEC Web of Conferences 239 04013 DOI: 10.1051/matecconf/201823904013