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**REGULATION OF THE MANAGEMENT OF PRODUCTION AND CONSUMPTION WASTE:
ECONOMIC AND LEGAL INSTRUMENTS**

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Abstract

In the presented article, legal and economic mechanisms of the waste management regulation in the Russian Federation are examined. The relevance of this topic is conditioned by the significant damage to the environment due to the accumulation of waste and insufficient regulation of this problem by the state. In Russia, problems of environmental pollution by household and industrial waste from year to year become more and more urgent and demand the fastest way to solve, however, the situation changes only for the worse. At the same time, this problem has long been successfully resolved in several countries. The purpose of this article is to analyze the problematic aspects of waste disposal in the Russian Federation and find ways to solve them. The results of the activities carried out in the field of environmental protection are analyzed. The current legislation of the Russian Federation regulating the waste management and opinions of researchers on the existing problems of regulation are investigated.

Keywords

Ecology – Waste management – Recycling – Separate collection – Promotion

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Introduction

The growing deterioration of the environmental situation observed for many years and especially sharply manifested in recent years, necessitates the development and adoption of a set of measures aimed at improving the environment and human life system¹. One of the most difficult problems of Russia is the problem of collection and recycling of all types of waste arising both in the process of industrial production and from the activities of the population. This problem is especially acute for the center of the European part of Russia, as this region is the main concentration of the country's population and the most intensive economic activity. Every year, the amount of waste increases almost exponentially, which is due more to the growth of consumption and the corresponding increase in the amount of waste left by each person in the process of their activities. There is constant pollution of water and soil, the load on landfills and the number of illegal dumps are increasing. For example, the citizens of Moscow and the Moscow region every year produce more than 10 million tons of waste, and only 5% of this amount is recycled².

Nowadays, one of the significant problems in the field of environmental protection and observance of the environmental rights of citizens is the recycling of waste and its transformation into recyclable raw materials for further use. According to the Federal Service for Supervision of Natural Resources for 2018 in the data on activity in the field of waste management, the following indicators are given: for 2018, about 7.3 billion tons of production wastes of 1-5 class of danger from legal entities and individual entrepreneurs were formed, about 2.5 billion tons (35%) of these wastes were left for storage and about 1 billion tons (14%) were buried, i. e. only about 50% of these wastes was subject to utilization and recycling³.

Thus, according to the Federal State Statistic Service of the Russian Federation, for 8 years (from 2010 to 2018) the volume of the formed waste has increased from 3.7 to 7.3 billion tons, practically by a factor of two. It follows from the mentioned above that the volume of the generated waste is growing at a very high rate, and the number of processing plants is already insufficient⁴.

The Government of the Russian Federation, being aware of the importance of state regulation of the management of production and consumption wastes, including the policy of industrial utilization charges, as well as the issues of collection, transportation, processing, utilization, neutralization, and disposal of municipal solid wastes, has approved

¹ I. Osokina; I. Afanasyev; S. Kurbanov; T. Lustina y D. Stepanova, "Tax regulation and attraction of investments in the waste management industry: innovations and technologies", Amazonia Investiga Vol: 8 num 23 (2019): 369-378 y A. V. Kramarenko; K. L. Manaenkov; A. V. Melnichuk; S. A. Makushkin y M. V. Vinichenko, "Sustainable development of construction in the context of mitigating environmental pollution", Revista Inclusiones Vol: 7 num Especial (2020): 579-590.

² A. V. Fedotov, "Zarubezhnyi opyt organizatsii i stimulirovaniya razdelnogo sbora i utilizatsii tverdykh bytovykh otkhodov na regionalnom urovne", Voprosy regionalnoi ekonomiki Vol: 4 num 41 (2019): 54-62.

³ Federalnaya sluzhba po nadzoru v sfere prirodopolzovaniya [Federal Service for Supervision of Natural Resources]. Available at: <https://rpn.gov.ru/search/?search=%D1%81%D1%82%D0%B0%D1%82%D0%B8%D1%81%D1%82%D0%B8%D0%BA%D0%B> (access date: 01.03.2020).

⁴ Federalnaya sluzhba gosudarstvennoi statistiki RF [Federal State Statistic Service of the Russian Federation]. Available at: <https://www.gks.ru/storage/mediabank/rus19.pdf> (access date: 01.03.2020).

the national project "Ecology"⁵. The most important goal and task of the national project "Ecology" is "the formation of a comprehensive system of management of municipal solid waste, including the elimination of landfills and reclamation of the territories where they are located, the creation of conditions for recycling of all production and consumption waste prohibited for burial", "effective management of production and consumption waste", and "creation of modern infrastructure"⁶. A great number of works of Russian and foreign scholars, such as A. V. Fedotov⁷, D. V. Koleskin⁸, P. A. Nosko⁹, and many others are devoted to the problems of legal and economic regulation of waste management. However, there is still a necessity to study theoretical and practical aspects of waste management regulation, especially those studying the experience of countries where the problems of recycling of production and consumption wastes have been successfully solved^{10,11}. Therefore, comprehensive scientific studies on the problems of waste management are very relevant, as they demonstrate successful international experience that allows a more rational use of the material and financial resources directed to this sphere.

Methods

The study was conducted using both general and special scientific methods. The dialectical method of cognition was chosen as the main one. In combination with it, the historical method was used, which allowed tracing the chronology of the studied phenomenon, the statistical method that showed the scale of the problem, and the methods of analysis and synthesis. The experience of the legal solution of the problem of municipal solid waste utilization in such countries and regions as Sweden, Germany, the USA, Japan, the European Union, and others was studied by means of comparative jurisprudence method. The most developed countries, applying innovative methods of solving these problems, were chosen as the objects of research. The choice of these objects is determined by the typicality and similarity of problems that occur in modern Russia. For the economic justification of the proposed solutions to the problems studied in the article, the fact-finding and formal-logic methods were used.

Results

Nowadays, the key act setting the vector of development of the corresponding sphere in the country is the Strategy of Ecological Safety of the Russian Federation until

⁵ Natsionalnyi proekt «Ekologiya». Strategiya RF [National project "Ecology". Strategy of the Russian Federation]. Available at: <https://strategy24.ru/rf/ecology/projects/natsional-nyyproyekt-ekologiya> (access date: 01.03.2020).

⁶ Natsionalnyi proekt «Ekologiya»...

⁷ A. V. Fedotov, Zarubezhnyi opyt organizatsii...

⁸ D. V. Koleskin, Ekologicheskaya problema obrashcheniya s musornymi otkhodami i ee pravovoe regulirovanie v Rossiiskoi Federatsii; V sbornike: Rossiiskaya nauka v sovremennom mire, Sbornik statei XXVII mezhdunarodnoi nauchno-prakticheskoi konferentsii (Moscow, 2020).

⁹ P. A. Nosko, "Sovremennye tendentsii v rossiiskoi sisteme platezhei za zagryaznenie okruzhayushchei sredy", Vestnik Evraziiskoi nauki Vol: 5 (2019).

¹⁰ B. Mustafayeva; S. Kaltayeva; A. Saparova; E. Alimkulova y M. Kulbayeva, "The Impact of Agricultural Environmental Pollutions on the Population's Quality of Life. The Experience of Kazakhstan", Journal of Environmental Management and Tourism Vol: 10 num 1 (2019): 161-170.

¹¹ S. I. Kolesnikov; M. A. Myasnikova; T. Minnikova; T. A. Ter-Misakyants; Sh. Kam y Y. V. Akimenko, Assessment of meadow soil resistance of the Azov Sea Region to pollution with heavy metals and oil", Ecology, Environment and Conservation Vol: 23 (2017): 2346-2351.

2025, approved by Presidential Decree № 176 of April 19, 2017¹². Currently, the main normative legal acts that form the basis for regulation of waste management in Russia are the Federal Law of 24.06.1998 № 89-FL "On Production and Consumption Wastes"¹³ and the Federal Law of 10.01.2002 № 7-FL "On Environmental Protection"¹⁴.

The first of these laws defines the goals and principles of state policy in the field of waste management and introduces terminology. This law also distinguishes responsibilities between three levels of public authority. The organization of waste management activities in the territories of municipalities is entrusted to local authorities; municipalities are also responsible for organizing separate waste collection¹⁵.

One of the main objectives of state regulation in this area is to reduce the amount of waste and its involvement in economic turnover, therefore, one of the legal mechanisms for dealing with waste are the norms of waste generation and limits on their disposal, which are developed by the rules approved by Order of the Ministry of Natural Resources of Russia dated 25.02.2010 No. 50¹⁶. However, over time, the amount of waste has increased dramatically, for example, compared to 2011, when it was possible to track about 4,303.3 million tons of waste per year, which is almost 1.5 times more now¹⁷.

Fines for violations of environmental laws are an integral part of legal support of the state policy in the field of waste management. Violation of the legal foundations in the field of treatment of production and consumption wastes, according to Article 8.2 of the Code of the Russian Federation on Administrative Offences, entails the imposition of an administrative fine or administrative suspension of activities for 90 days¹⁸. Fines are provided for legal entities, individual entrepreneurs, and individuals. Business entities compare the costs of installing equipment or implementing other measures to prevent environmental pollution with the amount of payment for violation of environmental legislation. Criticism of the system of fines in Russia concerns their insufficiently high size, therefore, the Federal Service for Supervision of Natural Resources has proposed to increase them: for large enterprises — twice and for objects of high risk — by an order¹⁹. Currently, fines are not high. For example, for violation of requirements when handling production and consumption wastes, a legal entity can be punished with payment of 100 to 250 thousand rubles or suspension of its activity for up to 90 days²⁰, for violations during land reclamation during

¹² Ukaz Prezidenta RF ot 19.04.2017 N 176 «O Strategii ekologicheskoi bezopasnosti Rossiiskoi Federatsii na period do 2025 goda». Sobranie zakonodatelstva RF, 24.04.2017, N 17, st. 2546.

¹³ Federalnyi zakon ot 24.06.1998 N 89-FL (red. ot 07.04.2020) «Ob otkhodakh proizvodstva i potrebleniya». Sobranie zakonodatelstva RF, N 26, 29.06.1998, st. 3009.

¹⁴ Federalnyi zakon ot 10.01.2002 N 7-FZ (red. ot 27.12.2019) «Ob okhrane okruzhayushchei sredy». Sobranie zakonodatelstva RF, 14.01.2002, N 2, st. 133.

¹⁵ D. V. Koleskin, Ekologicheskaya problema obrashcheniya s musornymi otkhodami i ee pravovoe regulirovanie v Rossiiskoi Federatsii; V sbornike: Rossiiskaya nauka v sovremennom mire. Sbornik statei XXVII mezhdunarodnoi nauchno-prakticheskoi konferentsii. (Moscow. 2020), 102-106.

¹⁶ Prikaz Minprirody Rossii ot 25.02.2010 N 50 (red. ot 25.07.2014) «O Poryadke razrabotki i utverzhdeniya normativov obrazovaniya otkhodov i limitov na ikh razmeshchenie». «Byulleten normativnykh aktov federalnykh organov ispolnitelnoi vlasti», N 17, 26.04.2010.

¹⁷ Ofitsialnyi sait Federalnoi sluzhby gosudarstvennoi statistiki. Available at: <http://www.gks.ru> (access date: 01.03.2020).

¹⁸ Kodeks Rossiiskoi Federatsii ob administrativnykh narusheniyakh ot 30.12.2001 №195-FZ s im. i dopol. v red. ot 13.01.2020. Available at: http://www.consultant.ru/document/cons_doc_LAW_113658 (access date: 01.03.2020).

¹⁹ O. Mordyushenko, Obekty vysokogo vzyska. Kommersant, Moscow, 19 Feb 2019, 234.

²⁰ Kodeks Rossiiskoi Federatsii ...

field development, the fine amounts to 0.4-0.7 million rubles²¹. As a rule, measures to prevent environmental pollution cost enterprises much more. As can be seen from the above-mentioned, the main problem in the sphere of legal support for waste management in the Russian Federation is the legislation that is seriously outdated and does not correspond to the existing realities.

One of the main economic methods used to combat waste pollution is Environmental Impact Payment (EIP) and environmental fees. The EIP is provided for by the above-mentioned Federal Law "On Environmental Protection", according to which, it is charged for air emissions, discharges of pollutants into water bodies, and disposal of production and consumption wastes. When determining the payment base, the persons to be charged consider the amount and mass of emissions and discharges of pollutants, firstly, within the limits of permissible standards, secondly, within the limits of temporarily permitted emissions and discharges, and thirdly, exceeding the standards. For waste disposal, the fee is calculated based on the size of the limits and their excesses. The law provides an incentive for environmental measures, as it allows the actual costs of their implementation to be deducted from the EIP. The list of such measures, among others, includes the implementation of the best available technologies; projecting, construction and reconstruction of water supply, drainage, sewerage systems, facilities and installations for the capture and disposal of pollutants; installation of the equipment to improve fuel combustion modes and neutralization of waste, and automated systems to control the composition and amount or mass of pollutants in the atmosphere and water bodies. On the one hand, the ability to offset environmental costs is an incentive for enterprises to implement them, which ultimately leads to environmental improvements. On the other hand, such an arrangement means lower revenues to the country's budget system. Notably, the indicator of the efficiency of state bodies in the sphere of environmental supervision is the receipts from the payment for a negative impact on the environment, which undermines the main objective of this payment, which is to improve the environmental situation²².

Among the disadvantages of the existing system of payment for a negative impact on the environment, researchers note the lack of targeted use of funds coming into the budget system of the country²³. As an alternative mechanism, it is possible to give an example of the order of transfer of funds paid by economic entities for environmental pollution to the state off-budget ecological fund from which expenditures on environmental protection measures were made in Russia in the period 1991-2001²⁴. In the absence of a specialized fund or account, there is a situation where the money received for pollution is not spent on restoration of the damage caused to the environment.

The system of payment for negative impact on the environment now also includes funds paid for the handling of municipal solid waste on the receipt for housing and communal services. Since 2019, all regions of Russia except Moscow, Saint Petersburg, and

²¹ D. I. Molchanova, Pravovoe regulirovanie obrashcheniya s otkhodami. V sbornike: Molodezh tretego tisyacheletiya sbornik nauchnykh statei (Moscow, 2019), 560-565.

²² P. A. Nosko, "Sovremennye tendentsii v rossiiskoi sisteme platezhei za zagryaznenie okruzhayushchei sredy", Vestnik Evraziiskoi nauki Vol: 5 (2019): 43.

²³ Yu. L. Maksimenko, "Kontseptualnye osnovy reformirovaniya prirodnokhrannykh platezhei: perekhod k adresno obosnovannoi ekologicheskoi plate", Ekologiya i promyshlennost Rossii Vol: 12 num 20 (2016): 39-43.

²⁴ T. P. Filicheva, "O perevode prirodnokhrannykh platezhei v status ekologicheskogo naloga", Territoriya novykh vozmozhnostei. Vestnik Vladivostokskogo gosudarstvennogo universiteta ekonomiki i servisa num 4 (2018): 49-57.

Sevastopol have had regional operators that collect, transport, process, recycle, neutralize, and dispose of municipal solid waste. With waste owners — individuals and legal entities, including management companies — each regional operator concludes contracts for waste management services. For such operators, a reduction of the EIP rate is envisaged when disposing of municipal solid waste of hazard class IV in 2018 (with its subsequent gradual increase over seven years) and exemption of operators from value-added tax and income tax. The formulas for calculating municipal solid waste treatment fees for residential premises are based on either the number of residents or the area occupied. The first option implies the possibility of recalculation in case of temporary absence of consumers. However, for example, in the Moscow region, there is no such option, since the fee calculation is tied to the area of residential premises, which is analogous to progressive taxation. In addition to the fact that the amount of generated municipal waste on a larger area doesn't need to be greater than on a smaller area, this approach does not allow to consider the behavior of a particular consumer, bearing in mind that a particular individual may collect waste separately and hand over part of the waste for recycling. As a measure of economic incentives for separate collection and disposal of recyclable waste by individuals and legal entities, allowing one to increase the number of raw materials for the waste processing industry, it is advisable to introduce the possibility of recalculating the fees for new public services for responsible consumers²⁵.

Another key non-tax payment directly related to environmental protection is the environmental fee paid by producers and importers for goods and their packaging. If the goods are not made to be eaten, the fee is charged only for packaging. The Federal Law "On Waste Production and Consumption" provides an exemption from the environmental levy when exporting the goods and/or packaging. In contrast to EIP, this type of payment is targeted, as the law prescribes that the funds received in the budget are spent on subsidies to the subjects of the Russian Federation to co-finance activities in the field of waste management (paragraph 10 of Article 24.5). However, experts note that funds from the environmental collection are not allocated for the efficient disposal of goods that have lost their consumer properties²⁶.

Among the disadvantages of the federal project "Integrated System for Municipal Solid Waste Management", noted by the World Wildlife Fund (WWF), we can point out those that are important in the context of payment for a new type of municipal service: the lack of targets and measures on such areas of state policy in the field of waste management as the maximum use of raw materials, prevention and reduction of waste; lack of measures to implement a separate municipal solid waste collection; unclear responsibilities of the integrator for the distribution of the received funds and the lack of guarantee of their distribution to the system solution of the waste problem; lack of solutions for non-recyclable waste, which poses a risk of further growth of landfills and waste incineration²⁷. We can add to this list the absence of indicators in the section of waste direction points — to landfills, incineration, and recycling²⁸. The problem of landfill growth is of public importance. In this regard, more decisive steps are required from legislators to develop the processing industry and allow other legal entities (small and medium enterprises) in addition to the regional

²⁵ D. I. Molchanova, Pravovoe regulirovanie obrashcheniya...

²⁶ D. I. Molchanova, Pravovoe regulirovanie obrashcheniya...

²⁷ Analiz komponentov Natsionalnogo proekta Ekologiya i predlozheniya po ikh sovershenstvovaniyu: Federalnyi proekt «Kompleksnaya sistema obrashcheniya s tverdymi kommunalnymi otkhodami» Vol: 2. Available at: <https://wwf.ru/ecology-national-project> (access date: 01.03.2020).

²⁸ D. I. Molchanova, Pravovoe regulirovanie obrashcheniya...

operator. Such an approach will ensure both the financial stability of the operator and the accelerated development of a new industry that provides added value, resolving social tensions, and improving the environmental situation in terms of reducing the negative impact on land and air.

Discussion

A study of the experience of developed countries in the field of waste management shows that separate collection of household waste is already established there, advanced industrial technologies for the processing of solid waste are widely used, and there are various incentives for the population and businesses that promote the interest of citizens in separate collection and subsequent delivery and recycling of collected household waste. The study has identified the most interesting experiences of individual countries in solving the problem of collection and recycling of municipal solid waste. Society widely cultivates the acquisition of goods obtained from the processing of municipal solid waste²⁹.

The experience of Sweden, where almost 99% of waste is recycled, is interesting. The Swedish government invests a lot of money in research and development in the field of ecology and environmental protection. The best-known developments include biofuels, smart grids, as well as carbon collection and storage. In 2013, research and development expenditure amounted to 3.3% of GDP, the fourth-highest in the Organisation for Economic Co-operation and Development (OECD). Sweden's reputation as an environmental pioneer dates back to the 1960-70s. For example, Sweden was the first country to establish an Environmental Protection Agency in 1967. Sweden was the country that hosted the first United Nations Conference on the Human Environment in 1972, which resulted in the creation of the United Nations Environment Programme (UNEP), the leading international environmental organization to this day³⁰. Sweden has a high proportion of products made from recycled materials, the other half of which is burned to produce energy that provides heat to apartments in large cities. "High fines are imposed on producers who do not control the disposal of packaging and expired goods, including electrical appliances, cars, and medicines"³¹.

In Sweden, garbage is sorted and stored in special containers (separately paper, glass, metal, plastic, food remains, and garbage that cannot be disposed of) or taken to sorting stations. Correct sorting is taught since kindergartens. Everything possible is recycled and the rest of the garbage is incinerated, providing electricity and heat to a large number of households (Stockholm is 45% supplied with the electricity and heat produced by incineration plants)³².

Sweden also imports incineration waste, including from Norway, the United Kingdom, and Ireland. In terms of energy generation from waste, Sweden ranks first in Europe. Special boxes for collecting waste paper are widely used in Sweden. The population fills these crates with waste paper. The collection of tin, plastic, glass products is also well established. At the

²⁹ A. V. Fedotov, Zarubezhnyi opyt organizatsii...

³⁰ Nulevye otkhody: kak v Shvetsii reshayut problemu musora. TASS News Agency. Available at: <https://tass.ru/obschestvo/4285030>

³¹ A. V. Fedotov, Zarubezhnyi opyt organizatsii...

³² K. Bolton y K. Rousta, Solid Waste Management Toward Zero Landfill: A Swedish Model. In Resource Recovery to Approach Zero Municipal Waste, Chapter: 1, edited by M.J. Taherzadeh and T. Richards. CRC Press. 2019, 53-63.

same time, there are tangible benefits for the population. Thus, "the owners of their own houses have the opportunity to halve the cost of waste disposal if they sign a contract according to which the waste is carefully sorted"³³. Garbage sorting is also a common practice in Japan, where in an apartment building in a separate room one can see a dozen bins for different types of waste. Illegal garbage disposal in Japan is a criminal offence, which can result in up to five years imprisonment. Incombustible garbage in Japan is used to create man-made islands. The ash left over from incineration is also used in the same way³⁴.

The experience of Germany is also interesting. Corrections in the legislation of 2012 obliged manufacturers, starting from the project stage, to monitor production for environmentally hazardous waste and complete the life cycle of the product as environmentally friendly as possible. As a result, by the middle of 2017, the recycling industry in Germany had a turnover of around €70 billion, and more than 250,000 jobs were created³⁵. Germany is one of Europe's leaders in establishing a system for collecting and recycling municipal solid waste. "There is a very active population in Germany. The population voluntarily sorts the garbage into separate bins. Besides, there is a system of fines and propaganda that prevents waste from being disposed of in uninhabited places"³⁶.

The availability of various methods for solving the problem has allowed creating an entire waste management system in large regions of our planet, as it was done in the EU. There is a Waste Management System, which is a set of measures that includes the collection, transportation, recycling, reuse, or disposal of waste. As a result of its implementation, a priority sequence of waste management methods has been established: waste prevention; pre-processing to facilitate reuse; recycling to obtain secondary material resources; recycling to obtain energy; and landfilling³⁷.

The EU has a whole package of legislative documents that contribute to the effective functioning of this system. The European legislation establishes the following priority sequence of waste management methods: waste prevention; pre-processing to facilitate reuse; recycling to obtain secondary material resources; recycling to obtain energy; and landfilling³⁸.

In the USA, a rational system has also been established for the most efficient functioning of domestic waste recycling plants. Separate waste collection is organized. Procurement firms receive good high incomes "due to the purchase of sorted waste from the population. Representatives of the class of poor people also benefit from the same income. One of the elements of the remuneration system for proper utilization is the payment of a certain amount of money for bottle delivery"³⁹. Besides, in the United States, household waste products are in high demand and satisfy the needs of the population for new goods and products.

³³ K. Bolton y K. Roustá, Solid Waste Management...

³⁴ W. Takahashi, "Economic rationalism or administrative rationalism? Curbside collection systems in Sweden and Japan", *Journal of Cleaner Production*, Vol: 2421 (2020): 118288

³⁵ A. V. Fedotov, *Zarubezhnyi opyt organizatsii...*

³⁶ A. V. Fedotov, *Zarubezhnyi opyt organizatsii...*

³⁷ A. V. Fedotov, *Zarubezhnyi opyt organizatsii...*

³⁸ L. Aldieri; G. Loppolo; C. P. Vinci. y T. Yigitcanlar, "Waste recycling patents and environmental innovations: An economic analysis of policy instruments in the USA, Japan and Europe", *Waste Management*, Vol: 9515 (2019): 612-619.

³⁹ L. Aldieri; G. Loppolo; C. P. Vinci y T. Yigitcanlar, *Waste recycling patents...*

Thus, we can say that nowadays there is a wealth of positive experience in the world in managing industrial and domestic waste, effective legislation and economic methods, including material incentives for the population and tax benefits for business, have been developed.

Conclusion

The studies presented in this article show that today the Russian Federation has developed strategies that clearly define state policy in the field of waste management and specify goals, methods, and resources for their achievement. However, normative regulation in many ways does not consider current realities, and economic regulatory measures are not sufficiently utilized, so the results of regulation in this area seem to be unsatisfactory. It is necessary to bring the current legislation in line with the urgent tasks of reducing and eliminating environmental pollution and its restoration, to redirect payments for environmental pollution exclusively for environmental purposes, to apply more widely the tax incentives to businesses engaged in waste treatment, and to widely use economic incentives for the population in separate collection of household waste, using the positive experience of the above-mentioned measures in other countries. A possible solution to the problem of waste disposal is seen in the integrated application of technological, economic, ideological, and legal regulatory means.

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