RUDN Journal of Public Administration
ISSN 2312-8313 (Print), ISSN 2411-1228 (Online)
Вестник РУДН. Серия:
ГОСУДАРСТВЕННОЕ И МУНИЦИПАЛЬНОЕ УПРАВЛЕНИЕ

2025 Том 12 No 2 164–188
http://journals.rudn.ru/publicadministrationy

DOI: 10.22363/2312-8313-2025-12-2-164-188
EDN: PEEVSB

Research article / Научная статья

National projects 2019–2024: “Comprehensive plan for the modernization and expansion of main infrastructure” and “Ecology”: selected implementation results, challenges, and institutional aspects

Galina A. Kulikovskaya[1], Gurgen L. Gukasyan[1,2], Garush S. Minasyan[1] ✉

[1]RUDN University, *Moscow, Russian Federation*
[2]Institute of Oriental Studies of the Russian Academy of Sciences, *Moscow, Russian Federation*
✉ minasyan_gs@pfur.ru

Abstract. This study explores the interrelation between the implementation of two key national projects of the Russian Federation — the Comprehensive Plan for the Modernization and Expansion of Main Infrastructure (CPMI) and the Ecology project. It identifies the specific institutional and legal mechanisms that either facilitate or hinder their coordinated implementation. Particular attention is paid to both the role of these large-scale projects in the country’s economic development and the contradictions that arise during the accelerated realization of infrastructure initiatives under weakened environmental control requirements. These contradictions manifest in reduced procedural transparency, increased violations of environmental legislation, and the degradation of specially protected natural areas. The study provides concrete examples of negative impacts, as well as positive cases that demonstrate the potential for synergy — from the modernization of transport and industrial facilities to the restoration of disturbed ecosystems. It offers a set of recommendations for institutional and regulatory measures aimed at achieving a balance between economic development and environmental safety: reinstating the mandatory state environmental review (SER), introducing strategic environmental assessment (SEA), digitalizing procedures, developing damage compensation mechanisms, and preventing changes to the boundaries of protected areas without public consent. Thus, the integration of the goals of the CPMI and Ecology projects into future national and federal initiatives in this domain may serve as a foundation for sustainable territorial development, provided that environmental priorities are upheld and effective stakeholder engagement is ensured.

Keywords: program-targeted approach, trunk infrastructure, economic growth, freight turnover, logistics, environmental policy, interagency cooperation, sustainable development

Contribution. All the authors participated in the development of the concept of this review, data collection, processing and analysis, drafted the manuscript, and formulated the conclusions.

Conflicts of interest. The authors declare no conflicts of interest.

Article history:
The article was submitted on 28.02.2025. The article was accepted on 10.04.2025.

For citation:
Kulikovskaya GA, Gukasyan GL, Minasyan GS. National projects 2019–2024: "Comprehensive plan for the modernization and expansion of main infrastructure" and "Ecology": selected implementation results, challenges, and institutional aspects. *RUDN Journal of Public Administration.* 2025;12(2):164–188. https://doi.org/10.22363/2312-8313-2025-12-2-164-188

Национальные проекты 2019–2024 гг. «Комплексный план модернизации и расширения магистральной инфраструктуры» и «Экология»: некоторые результаты реализации, вызовы и институциональные аспекты

Г.А. Куликовская[1], Г.Л. Гукасян[1,2], Г.С. Минасян[1] ✉

[1]Российский университет дружбы народов, *Москва, Россия*
[2]Институт востоковедения Российской академии наук, *Москва, Россия*
✉ minasyan_gs@pfur.ru

Аннотация. Рассмотрена взаимосвязь между реализацией двух ключевых национальных проектов Российской Федерации — «Комплексного плана модернизации и расширения магистральной инфраструктуры» (КПМИ) и «Экология». Выявлена специфика институциональных и правовых механизмов, обеспечивающих или, напротив, препятствующих их согласованной реализации. Особое внимание уделено роли этих крупномасштабных проектов в экономическом развитии страны и противоречиям, возникающим при ускоренной реализации инфраструктурных инициатив в условиях ослабления требований экологического контроля, что проявляется в снижении прозрачности процедур, росте нарушений природоохранного законодательства и ухудшении состояния особо охраняемых природных территорий. Приведены конкретные примеры негативного воздействия, а также позитивные кейсы, демонстрирующие возможности синергии — от модернизации транспортных и промышленных объектов до восстановления нарушенных экосистем. Предложены некоторые рекомендации по институциональному и нормативному обеспечению баланса между экономическим развитием и экологической безопасностью: восстановление обязательности экологической экспертизы, внедрение стратегической оценки воздействия на окружающую среду, цифровизацию процедур, развитие механизмов компенсации ущерба и недопущение изменения границ особо охраняемых территорий без общественного согласия. Интеграция целей проектов КПМИ и «Экология» в последующих национальных и федеральных проектах в данной сфере может стать основой устойчивого территориального развития при условии соблюдения экологических приоритетов и обеспечения эффективного взаимодействия всех заинтересованных сторон.

Ключевые слова: программно-целевой подход, магистральная инфраструктура, экономический рост, грузооборот, логистика, экологическая политика, межведомственное взаимодействие, устойчивое развитие

Вклад авторов. Все авторы участвовали в разработке концепции исследования, сборе, обработке и анализе данных, написании текста рукописи, формулировке выводов.

Заявление о конфликте интересов. Авторы заявляют об отсутствии конфликта интересов.

История статьи:
Поступила в редакцию 28.02.2025; принята к публикации 10.04.2025.

Для цитирования:
Куликовская Г.А., Гукасян Г.Л., Минасян Г.С. Национальные проекты 2019–2024 гг. «Комплексный план модернизации и расширения магистральной инфраструктуры» и «Экология»: некоторые результаты реализации, вызовы и институциональные аспекты // Вестник Российского университета дружбы народов. Серия: Государственное и муниципальное управление. 2025. Т. 12. № 2. С. 164–188. https://doi.org/10.22363/2312-8313-2025-12-2-164-188

Introduction

In the context of accelerating scientific and technological progress and increasing competition in the global economic space, sustainable development is becoming one of the key goals of strategic management at the state level. In these conditions, it is particularly important to improve the mechanisms of a program-oriented approach to management, which makes it possible to mobilize resources for priority areas of socio-economic and technological development. The program-based approach, which has proven effective in both Russian and foreign practice, ensures the implementation of major intersectoral transformations aimed at modernizing infrastructure, developing human capital, and protecting the environment.

In the history of Russian management, this method goes back to the experience of the State Electrification Plan of Russia (GOELRO) and the 5-year development plans of the USSR, now it has become widespread in the format of federal targeted programs, and since 2018 — in the form of national projects. The latter are strategically oriented instruments of public administration, forming a single framework for planning, resource provision and interdepartmental coordination [1. P. 108]. The national projects of the federal scale 2019–2024 were developed in three main areas: "Human capital", "Comfortable living environment" and "Economic growth". And if the main goal is to improve the quality of life of the country's citizens, then the National Projects of the Human Capital group are aimed at the growth and development of human capital. The growth of the population's well-being, as a result of the growth and development of the economy, is ensured by the projects of the Economic Growth group, but the quality of life is impossible without a healthy environment, which should be ensured by the implementation of projects in the "Comfortable living environment" direction. Therefore, we can safely say that National Projects such as Labor Productivity, the Comprehensive Plan for the Modernization and Expansion of the Backbone Infrastructure (KPMI) and Ecology are among the key elements of the comprehensive strategy for the socio-economic development of the Russian Federation. They are interconnected and focused on achieving the goals of sustainable development, including increasing

economic efficiency, reducing anthropogenic pressure on the environment and forming a balanced spatial policy. International experience confirms that the development of infrastructure, especially transport and environmental infrastructure, has a powerful multiplier effect on the economy, ensuring productivity growth, reducing logistical costs, improving the quality of life and investment attractiveness of territories [2].

At the same time, global challenges such as climate change, degradation of natural resources, environmental pollution and loss of biodiversity require a systematic and proactive response from the State. The increase in anthropogenic pressure caused by industrialization, urbanization and increased consumption makes it necessary to form an effective state policy in the field of environmental protection and rational use of natural resources. In these circumstances, along with other projects, the national Ecology project, implemented from 2019 to 2024, has gained special importance as an important element of the state strategy for sustainable development. He brought together the efforts of federal and regional executive authorities, scientific organizations, business and civil society to solve a complex range of tasks: improving air and water quality, restoring forests, protecting especially valuable natural sites, developing a waste management system, eliminating accumulated environmental damage, as well as forming an ecological culture and educating the population. In this regard, it is important to consider the characteristic features of the implementation of two national projects in 2019–2024: the Ecology project, and the KPMI project that intersects with its tasks within the framework of infrastructure modernization. Based on regulatory, statistical, and analytical sources, it is possible to conduct a preliminary analysis of the results of the implementation of these projects and individual federal subprojects, consider the institutional and regional problems that have arisen during their implementation, and suggest ways to improve Russia's environmental policy, considering current challenges and global trends. Moreover, the further implementation of these strategic goals of the Russian Federation will be continued in the following group of national projects, in particular, "Environmental well-being", "Efficient transport system", "Infrastructure for life"[1].

The objective of the study is to conduct a comprehensive scientific analysis of the implementation processes of the national projects "Ecology" and KPMI in the Russian Federation during 2019–2024. **The study aims** to identify key trends, achievements, institutional and regional challenges, as well as to assess their contribution to achieving the goals of sustainable socio-economic development. Within the framework of the research, the following tasks are set: to systematize the experience gained from the implementation of these projects, to analyze the

[1] *National projects of Russia*. URL: https://xn--80aapampemcchfmo7a3c9ehj.xn--p1ai/ (accessed: 22.02.2025) (In Russ.).

effectiveness of the mechanisms of public administration employed, to identify success factors and barriers at various levels — federal, regional, and municipal — and to develop substantiated proposals for improving state policy in the areas of environmental development and transportation infrastructure modernization, in line with current challenges and strategic priorities of Russia.

Methods

The methodological basis of this study is based on the use of complementary scientific approaches aimed at analyzing the implementation of the KPMI national project and the Ecology project in the Russian Federation in 2019–2024. The combination of a number of research approaches made it possible to comprehensively consider both the institutional and infrastructural aspects of the selected projects. The following are the key methods used:

- regulatory and legal analysis, which made it possible to study the current legislation and subordinate regulations governing the field of environmental protection, nature management, as well as the implementation of program-oriented management within the framework of national projects;
- comparative analysis used to identify interregional differences in the implementation of individual activities, compare the levels of results achieved, and study success factors at the regional level;
- content analysis of open sources, including public reports, expert opinions, materials from scientific publications and discussions, which made it possible to assess the public perception of the effectiveness of the initiatives being implemented;
- an expert approach implemented by summarizing the conclusions of leading experts in the field of state environmental policy, sustainable development and infrastructure project management, as well as analyzing international ratings and indices (In particular, logistics and environmental).

The use of these methods made it possible to achieve sufficient validity of the conclusions, to take into account the complex of factors influencing the implementation of national projects and to develop proposals for their further improvement.

Results

The Comprehensive Plan for the Modernization and Expansion of the Backbone Infrastructure (KPMI) is one of the national projects implemented in the Russian Federation in the period from 2019 to 2024 (since 2025 its directions have been transformed into new national projects), was a set of interrelated targeted integrated programs (federal projects) aimed at modernization and creation of new

facilities transport infrastructure. The key areas were railways and highways, ports, the Northern Sea Route (NSR), as well as a network of airports. KPMI's main objective was to increase the efficiency of the manufacturing sector by reducing transport costs and increasing Russia's involvement in international transport flows, which is especially important in the context of global competition and the need to expand the country's export potential.

Within the framework of the KPMI, special attention was paid to the development of the railway infrastructure of the Eastern landfill, including railway approaches to the seaports of the Azov-Black Sea basin and the North-Western region, the modernization of the Central Transport Hub and the development of high-speed rail links throughout the Russian Federation.[2] A significant contribution to the improvement of regional transport accessibility was also made through the modernization of the network of regional airports. One of the key challenges that accompanied the implementation of KPMI was the identification and testing of performance indicators: savings on cargo transportation, reduction of time costs, and others. Despite the initial methodological uncertainty, the development and implementation of relevant indicators were successfully implemented with the assistance of the Ministry of Economic Development, including through the assessment of time costs for freight transportation[3].

Without pretending to comprehensively review all the projects included in the KPMI structure, it is necessary to emphasize the importance of the railway projects of the Eastern Polygon, which play a crucial role in shaping the country's sustainable transport framework. As noted in the study [3. P. 62], the presence of a developed transport system is the most important condition for improving the standard of living of the population and increasing production efficiency, forming a single economic space.

The historical experience of pre-revolutionary Russia, cited in the work of D. Macheret, confirms the thesis of a close relationship between the development of the railway network and the acceleration of industrial growth. From 1871 to 1880, the length of the railways increased by more than 12,000 km, and the density reached 2 km per 10,000 people. In the period from the 1860s to the beginning of the 20th century, the human development index increased 1.5 times, especially rapidly in the 1880s, when the country was covered with a network of railways. The development of the railway infrastructure contributed to the establishment of the coal, metallurgical, petroleum, cotton and salt industries. An example

[2] Due to the comprehensive modernization of two major rail lines — the Baikal-Amur Mainline and the Trans-Siberian Railway — the carrying capacity of the railway network under this project nearly doubles, increasing from 75 to 180 million tons, while the transit container flow quadruples, with a significant reduction in freight transportation time.

[3] Modernization has come down to evaluation. *RBC.* 19.02.2019. URL: https://www.rbc.ru/newspaper/2019/02/19/ 5c6ac3339a 794714 23e559c7 (accessed: 22.02.2025). (In Russ.).

of savings on transportation: the delivery of wheat from Uralsk to Samara (260 km) by horse-drawn transport cost 17–23 rubles/ton, and with the advent of the railway, the delivery of the same wheat from Uralsk to much more distant Hamburg began to cost about the same — about 19.5 rubles/ton [4]. In addition, the construction of the Trans-Siberian Railway (Transsib) contributed to the formation of new industrial centers: Chelyabinsk, Novosibirsk, Taiga, Isilkul, etc.[4]

The need to improve the backbone infrastructure is confirmed by a number of indicators presented in Table 1, taken from open sources of the Government of the Russian Federation.

Table 1

Some planned performance indicators for CPMI implementation (2019–2024)

Indicators	2019	2020	2021	2022	2023	2024
Increase in seaport capacity, million tonnes	34	56	34	45	125	44
Delivery time of transit container traffic in the direction “Europe — Western China”, days	3.2		2.2			1.6
Delivery time of transit container traffic in the “West — East” direction, days	8.9		8.0			7.0
Average commercial speed of goods movement by rail, km/day	380.0		400.0			440.0

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan on the basis of a Comprehensive plan for the modernization and expansion of trunk infrastructure for the period until 2024[5].

Thus, the railway infrastructure projects within KPMI not only contributed to a short-term reduction in logistics costs, but also laid the foundation for long-term sustainable economic growth, including by creating a favorable environment for interregional trade and international cooperation.

The developed transport infrastructure determines the involvement of the resources of individual territories in the sphere of material production, increases the territorial and social mobility of the population. As a result, it contributes to the organization of the economic space, ensures the further implementation of the spatial division of labor and the development of new territories [5. P. 9]. Among the direct effects of the impact of transport infrastructure on the economy is a reduction in transport costs, increased mobility of production and labor resources, and

[4] Ternopolskya O. Gaining speed: How the Trans-Siberian railway boosted Russia's economy. The country's main arterial route provided a powerful impulse for the development of Siberia and the Far East. *Izvestia.* 23.04.2021. URL: https://iz.ru/1155585/olesia-ternopolskaia/nabiraia-skorost-kak-transsib-povliial-na-ekonomiku-rossii (accessed: 10.02.2025). (In Russ.).

[5] A comprehensive plan for the modernization and expansion of the backbone infrastructure for the period up to 2024. URL: http://static.government.ru/media/files/mMrrbr3q9P6cGfWP3WxSmf7lCvAhrLob.pdf (accessed: 10.02.2025). (In Russ.).

among the indirect effects is an increase in product production, stimulating the intensive development of related industries, and improving the investment climate. For example, in addition to solving transport problems, the modernization of routes such as the BAM and Transsib within the KPMI creates more than 100,000 jobs, allows for the commissioning of about 50 new investment projects, which provides additional GDP growth of at least 3%[6].

Before the start of the implementation of the KPMI in the country, there was a lack of capacity of a number of tracks and railways [6. pp. 17–18]. According to T.V. Uskova, according to a study conducted by the InfraONE investment company since 2018, by the end of 2019, the integrated infrastructure development index in Russia was 5.61 out of 10, and the country's transport infrastructure development index did not increase on average, but decreased by 0.01 points, from 3.24 to 3.23. In particular, the volume of transportation in 2019, cargos accounted for 97% of the value in 2000: 5732.5 million tons against 5878.4 million tons in 2000 [7. pp. 10–12]. As for railways, for example, from the moment BAM was commissioned in the mid-1980s until 2020, there were practically no new major projects for the development of the freight railway network (although the necessary reconstruction of tracks, bridges, tunnels was carried out), and the length of the network remained at about 85.4 km (2023)[7]. For example, Primorsky Krai alone lost about 500 million rubles of tax revenue per year due to insufficient railway capacity, according to some estimates in 2023[8]. And in the Khabarovsk Territory government, back in 2020, it was noted that the main constraint on the development of one of the largest centers of economic growth in the BAM gravity zone in the Far Eastern Federal District, the Vanino-Sovetsko-Gavansky transport and industrial hub, was restrained by the shortage of the carrying capacity of the Eastern landfill in the amount of about 80 million tons per year. The growth of cargo traffic towards the seaports of Vanino and Sovetskaya Gavan by 2025 was already projected at about 130 million tons per year, and by 2030 — up to 151 million tons per year.[9] There are many other examples of the dependence of economic growth on transport infrastructure. The low capacity of the railway made it necessary to determine the priority of goods, the determination procedure was not always transparent and understandable, and

[6] Modernization of transport infrastructure. *National Projects 2019–2024.* 15.11.2022. URL: (accessed: 10.02.2025). (In Russ.).

[7] Kudiyarov S. After a forty-year hiatus, new railway projects are coming to Russia. URL: https://kiozk.ru/ article/monokl/po-tundre-po-zeleznoj-doroge (accessed: 10.02.2025).

[8] The railway is optimistic, the shippers are skeptical: what do industry participants think about the modernization of the Eastern landfill. *VL.RU.* 11.09.2023. URL: https://www.newsvl.ru/eef/2023/09/11/219397/ (accessed: 10.02.2025) (In Russ.).

[9] Experts: insufficient capacity of the BAM and Trans-Siberian railways constrains the development of major enterprises in the Far Eastern Federal District. *TASS;* 2020 Jun 2. URL: https://tass.ru/ekonomika/ 8622933?ysclid=m96u64fu17561300928 (accessed:10.02.2025). (In Russ.).

it became a corruption-causing factor. Another problem for industrial enterprises, especially in the extractive industries, is the return of empty railway tanks and containers.

Of course, the performance of Russia's transport infrastructure depended on the pace of economic growth, and was affected by economic sanctions and other restrictions, especially since, especially since 2022, a sharp reorientation of foreign trade transport flows from West to East was required (Table 2).

Table 2

Dynamics of railway freight turnover and GDP of the Russian Federation in 2015–2022 vs. the previous year, %

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cargo turnover	100.2	101.6	106.4	104.2	100.2	97.8	103.7	99.9	99.2
GDP	98.0	100.2	101.8	102.8	102.2	97.3	105.6	97.9	103.6

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan on the basis of railway industry indicators on the state of the economy[10].

It should be noted that in the above conditions, it does not seem reasonable to focus on the assessments of international organizations, such as the Logistics Efficiency Index (LPI), determined every 2 years, when analyzing progress in the development of the main transport infrastructure of the Russian Federation Since this index mainly covers aspects of foreign trade, it is based on expert surveys, where the subjective factor plays a large role. This index includes such indicators as the effectiveness of customs clearance procedures for goods, the convenience of organizing supplies at competitive prices, which in the context of anti-Russian sanctions could not but dramatically affect Russia's place in this index. In 2023, Russia ranked 88th in this index with a score of 2.6 points, while in 2018 Russia ranked 75th with a score of 2.76, compared with 99th (2.57) in 2016 and 90th in 2014 (2,69)[11].

More important are the performance indicators of the Comprehensive Plan for Modernization and Expansion of the Backbone Infrastructure. In general, as stated during his speech in the State Duma with the annual report on the work of the government on March 26, 2025. Prime Minister Mikhail Mishustin, all 14 national projects completed last year have been completed. "The government has created an effective management system for national projects, which has made it possible

[10] Transport of Russia. *Information and Statistical Bulletin, 2023. Ministry of Transport of the Russian Federation.* Moscow, 2024. 39 p. (In Russ.).

[11] Logistics Performance Index (LPI). *The World Bank.* URL: https://lpi.worldbank.org/international/global (accessed: 08.02.2025).

to monitor them almost online. As a result, the completed national projects have been completed, the Prime Minister stressed, also noting that national projects are one of the key tools of the government's work"[12].

As for KIMI, it is estimated that by the end of 2024, five federal projects within the framework of a comprehensive plan out of seven were completed with 100% financing. These are "Development of the railway infrastructure of the Central Transport Hub" (39.2 billion rubles; it was completed ahead of schedule, and also received additional funds), "Development of railway approaches to the seaports of the North-Western basin" (11.5 billion rubles), "Development of railway approaches to the seaports of the Azov-Black Sea basin" (8.5 billion rubles), "Development of high-speed rail lines" (3 billion rubles; it was completed ahead of schedule) and "Development of seaports" (2.3 billion rubles). Two more federal draft plans, "Development of regional airports" and "Development of the Northern Sea Route", were completed by 99.5% and 99%, respectively. They reached 28.9 billion rubles and 49.4 billion rubles[13].

During the 6 years of the implementation of the KPMI transport part (2019–2024), about 1.9 trillion rubles were allocated from the federal budget for it. In the parameters of the comprehensive plan approved in the fall of 2018, which were adopted in 2018, it was planned to spend 3 trillion rubles of federal funds for 2019–2024, and 6.3 trillion rubles, considering extra-budgetary and other sources. The lower level of funding was due to the COVID-19 pandemic, as well as foreign economic and other restrictions and a certain revision of priorities[14]. In addition, part of the funds was redistributed to the also important project "Safe and high-quality roads". Financing for the modernization of the Eastern landfill in 2024 amounted to 360 billion rubles (the 2nd and 3rd stages of the development of the Eastern Landfill), and according to the third stage of modernization of the BAM and Transsib approved by the Russian Government until 2035, the amount of financing was planned to be more than 3.7 trillion rubles[15].

As Russian Prime Minister Mikhail Mishustin noted during a discussion in March 2024 of the situation in the Russian railway industry with Alexey Druzhinin, head of the Federal Agency for Railway Transport, about a billion

[12] Mishustin reported on the implementation of all national projects completed in 2024. *Izvestia.* 26.03.2025. URL: https://iz.ru/1860144/2025-03-26/mishustin-soobshchil-o-vypolnenii-vsekh-zavershivshikhsia-v-2024-godu-natc proe ktov (accessed: 27.03.2025) (In Russ.).

[13] Comprehensive plan and national projects: results of 2024. *Sherpa Group*. 27.01.2025. URL: https://sherpagroup.ru/analytics/8wexadg?ysclid=m8vgs275tv839130260 (accessed: 09.02.2025) (In Russ.).

[14] Comprehensive plan and national projects: results of 2024. *Sherpa Group.* 27.01.2025. URL: https://sherpagroup.ru/analytics/ 8wexadg?ysclid=m8vgs275tv839130260 (accessed: 14.02.2025) (In Russ.).

[15] Financing for the development of the Eastern landfill in 2024 will amount to 360 billion rubles. *NEFTEGAZ.RU.* 09.07.2024. URL: https://neftegaz.ru/news/transport-and-storage/842635-finansirovanie-razvitiya-vostochnogo-poligona-v-2024-g-sostavit-360-mlrd-rub/ (accessed: 10.02.2025) (In Russ.).

passengers and almost 90% of all cargo are transported by rail in Russia per year. "It is very important to further improve the network bandwidth so that we can make progress in all our capabilities and speed of movement"[16].

Even though a number of synergetic effects of implementing infrastructure projects within the framework of KPMI may not appear "immediately", there are obvious arguments about the role of national projects such as KPMI, and for lack of space, we will cite just a few.

Using the example of railway infrastructure development alone, it can be noted that from 2017 to 2023, the carrying capacity of the Eastern Landfill increased by more than a third (by 37%), which provided a critically needed "turn to the East" in 2022 — in response to large-scale sanctions imposed by the OECD countries. This shift was accompanied by the appearance of the first project in this area, fully funded by private capital, the Pacific Railway. The dynamics and forecast of the capacity of the Eastern Landfill for the period 2013–2032 are presented in Table 3.

Table 3

Growth of throughput of the Eastern polygon of railways (Transsib, BAM) in 2013–2032, mln tonnes

Year	2013	2018	2019	2020	2021	2022	2023	2024	2027	2030	2032
Throughput, mln tonnes	97.8	123.4	132	144	144	158	173	180	197	210	255...270

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan on the basis of Russian Railways data[17].

At the end of 2023, First Deputy Prime Minister Andrei Belousov reported that the volume of freight transportation along the Eastern Polygon was estimated at over 300 million tons, representing an 11% increase compared to the 2021 level. According to his statement, freight traffic along the Azov-Black Sea corridor reached approximately 220 million tons in 2023, while transportation along the North-South international transport corridor exceeded 19 million tons. According to A. Belousov, "Radical restructuring of export cargo flows is being carried out to enter the markets of friendly countries". As Deputy Prime Minister Vitaly Saveliev, who oversees the transport industry, noted, "today BAM plays a key role in the development of cargo transportation in the eastern direction, opens up the markets of the Asia-Pacific region for Russian companies, and develops the regions through which it passes"[18]. If 10 years ago the western

[16] Mishustin expects to increase the capacity of the Russian railway network. *RG.RU.* 07.03.2024. URL: https://rg.ru/2024/03/07/mishustin-ozhidaet-povysheniia-propusknoj-sposobnosti-zheleznodorozhnoj-seti-rf.html?utm referrer=https%3A%2F%2Fya.ru%2F (accessed: 14.02.2025) (In Russ.).

[17] The capacity of the Eastern landfill has reached 180 million tonnes. *Gudok.* 26.03.2025. URL: https://gudok.ru/rzd/novosti/propusknaya-sposobnost-vostochnogo-poligona-dostigla-180-mln-tonn/?ysclid=m96tyic m93189086097 (accessed: 27.03.2025) (In Russ.).

[18] And I will ask you, Vostochny, to stay! *Gudok.* 25.12.2023. URL: https://vgudok.com/reforma/vas-

direction of Russia's foreign trade, mainly the European Union, accounted for 47% of trade, while Asia accounted for only 29%, then in 2023 Asia accounted for about 66%, and the European Union 11%[19]. At the same time, it is obvious that transport infrastructure projects are inextricably linked to the National Project "International Cooperation and Export", in which one of the most important tasks is to cover the mainstay countries with Russian infrastructure for conducting foreign economic activity and ensuring industrial and cooperative connectivity[20]. In the Message of the President of the Russian Federation to the Federal Assembly in 2024 Vladimir Putin said: "The third stage of the expansion of the Eastern Polygon of the BAMA and Transsib railways is being launched. By 2030, their capacity will increase to 210 million tons per year. At the same time, the ports of Vanino and Sovetskaya Gavan should be developed"[21].

According to expert organizations, the total increase in gross output as a result of the expansion and modernization of the BAM and Transsib for the period from 2019 to 2025 was previously estimated at 4.98 trillion rubles, Russia's GDP growth at 2.79 trillion rubles, and budget revenues at 714 billion rubles[22].

To analyze the role of transport infrastructure projects, it is advisable to look at the experience of other large countries, for example, the People's Republic of China. Thus, one of the studies conducted by Chinese specialists using mathematical analysis based on the mediation effect model (which aims to identify the relationship between two indicators through a mediator variable) allowed them to conclude that transport infrastructure gives a powerful impetus to development by strengthening the interaction of the most important factors of economic growth, such as the supply of factors of production, industrial modernization and the expansion of the market. When analyzing the impact of infrastructure on the intensification of the impact of each of these factors on economic growth in the period under study, the coefficients characterizing this impact were fixed at 65% or more, although the heterogeneity of the impact of transport infrastructure on general well-being was noted, and it was most significantly reflected in areas with

vostochnyy-ya-poproshu-ostatsya-prezident-rossii-rasskazal-rzhd-pravitelstvu-i-biznesu (accessed: 17.02.2025) (In Russ.).

[19] Container logistics of the Eastern Landfill: challenges and new opportunities. Eastern Economic Forum. *Novosti.* 04.09.2024. URL: https://forumvostok.ru/news/kontejnernaja-logistika-vostochnogo-poligona-vyzovy-i-novye-vozmozhnosti/ (accessed: 24.03.2025) (In Russ.).

[20] National Project "International Cooperation and Export". *Government of Russia. National projects.* URL: http://government.ru/rugovclassifier/922/about/ (accessed: 12.03.2025) (In Russ.).

[21] Growing inclination of the Eastern Polygon. *Rossiiskaya Gazeta;* 2024 Jul 1. 01.07.2024. URL: https://rg.ru/2024/07/01/vozrosshaia-tiaga-vostochnogo-poligona.html?utm_referrer=https%-3A%2F%2Fyandex.ru% 2F (accessed: 27.03.2025) (In Russ.).

[22] Eight groups of effects from the development of the eastern polygon. *Marine News of Russia.* 29.07.2020. URL: https://morvesti.ru/analitika/1692/84877/?ysclid=m96y158vuw12395604 (accessed: 20.03.2025) (In Russ.).

large urban populations, the eastern regions of the country and new cities. During the 20th Congress of the Communist Party of China in 2022, which set the goal of moving towards the prosperity of society, it was emphasized that the pioneers of Chinese-style modernization using transport as a link had achieved remarkable success, in documents and statements it was noted: "If you want to get rich, first build roads", "Transport + poverty reduction", "Transport + technologies are manifestations of the construction of transport infrastructure for common prosperity" [8. PP. 2–3, 15–19].

In conclusion, the analysis of the role of the National Project "Comprehensive Plan for the modernization and expansion of the backbone infrastructure" (KPMI) should emphasize that the development of transport infrastructure without the simultaneous socio-economic recovery of adjacent territories cannot fully contribute to the transformation of these regions into growth points of the Russian economy. Only if high-tech production clusters are created, focused on deep processing of raw materials, ensuring a modern standard of living for the population and sustainable employment, transport projects can act as catalysts for integrated territorial development. In this regard, the implementation of the KPMI should be carried out in close coordination with other national projects, in particular, in the field of increasing labor productivity and environmental protection.

In this context, the results of the implementation of the National Ecology Project are of particular importance. Let's look at some of them. As part of the national Ecology project, the federal Clean Air project was implemented in 12 major industrial centers of the country, aimed at reducing atmospheric pollution. Over the five years of its implementation, it was possible to achieve an overall reduction in pollutant emissions by 12% [9]. Significant positive changes have been recorded in cities such as Moscow, St. Petersburg, and Nizhny Novgorod, where industrial facilities have been modernized, more environmentally friendly fuels have been adopted, and modern air filtration and purification technologies have been introduced.

Nevertheless, in some regions, such as the Chelyabinsk Region and the Krasnoyarsk Territory, cases of systematic excess of the maximum permissible concentrations (MPC) of harmful substances in the atmospheric air continue to be recorded. Among the key factors hindering the improvement of the environmental situation, there is a high level of physical wear of production equipment, insufficient effectiveness of regional environmental supervision, as well as a low level of public awareness of ongoing environmental protection measures.

These circumstances emphasize the need for an integrated approach to environmental policy, involving increased coordination between federal and regional authorities, increased transparency and openness of environmental initiatives, as well as the active participation of civil society in the process of environmental control and evaluation of the effectiveness of implemented measures (Fig. 1).

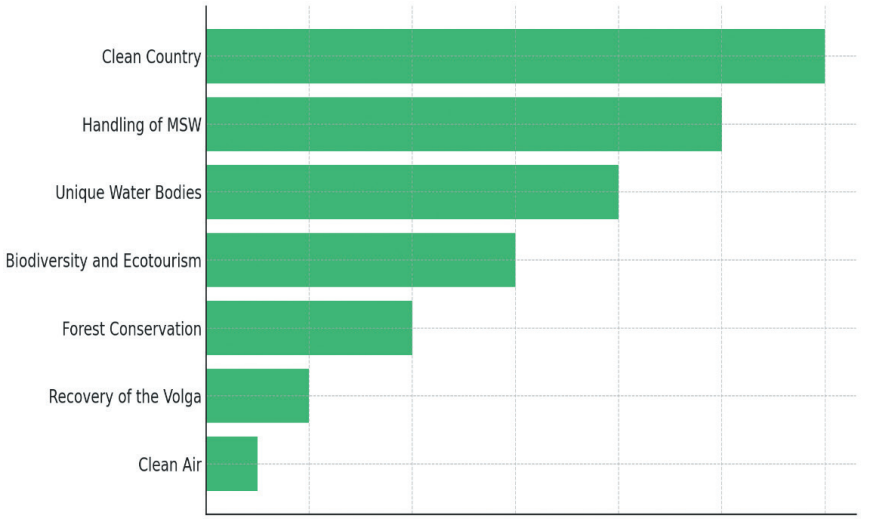

Fig. 1. Comparative analysis of achievements across federal projects within the national project "Ecology"

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan based on data[23] from the Passport of the National Project "Ecology", Ministry of Natural Resources and Environment of the Russian Federation.

The federal project "Volga Rehabilitation" is being implemented with the aim of significantly reducing the volume of untreated wastewater discharges into the country's largest waterway. In the period from 2019 to 2024, more than 50 sewage treatment plants were built and modernized, as well as dozens of kilometers of polluted coastlines were cleaned[24]. The most significant results were achieved in the Samara and Nizhny Novgorod regions, where the implementation of measures was accompanied by active administrative and technical support.

At the same time, difficulties remain in the Astrakhan and Volgograd regions due to insufficient financing and poor organizational support for projects. These factors lead to delays in the implementation of planned activities and make it difficult to achieve the targets set by the federal program (Fig. 2).

The Federal Forest Conservation Project covers reforestation, prevention and extinguishing of forest fires, as well as combating illegal deforestation. Within the framework of the project, more than 500 million seedlings are planted annually [10]. The Republic of Mordovia, Tatarstan and the Rostov Region are recognized as leaders, where nurseries are successfully developing, modern monitoring technologies and geoinformation systems are used. However, in Siberia and the Far East, especially in the Irkutsk and Omsk regions, the risks of large-scale fires caused by both natural factors and human activity remain.

[23] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 14.01.2025) (In Russ.).
[24] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 14.01.2025) (In Russ.).

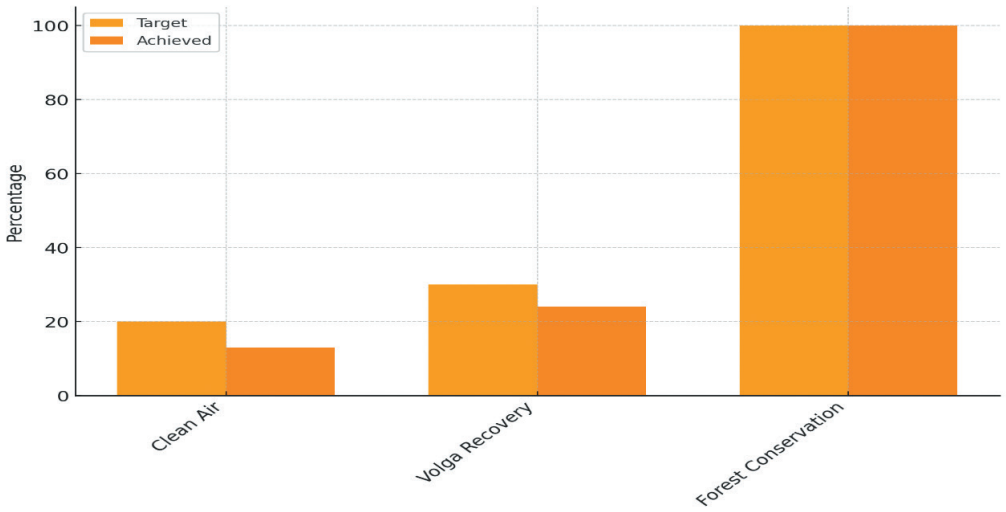

Fig. 2. Comparison of achieved and target indicators

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan based on data[25] from the Passport of the National Project "Ecology", Ministry of Natural Resources and Environment of the Russian Federation.

The federal project "Conservation of Biological Diversity and Development of Ecological Tourism" is aimed at expanding the network of specially protected natural areas, restoring the number of rare and endangered species of animals and plants, as well as creating a modern infrastructure for ecological tourism. During the project period, 24 new protected areas were created, and the total area of such territories increased by 3.7 million hectares[26]. Special attention is paid to the conservation of the Amur tiger, the Far Eastern leopard, the white crane and other endangered species. At the same time, a number of regions have identified a lack of tourism infrastructure and a lack of environmental education programs for the population.

The federal project "Conservation of Unique Water Bodies" is aimed at protecting and restoring Russia's highly valuable aquatic ecosystems. Work is underway to clean up the coastlines of Lake Baikal, Lake Teletskoye and other bodies of water. More than 15 thousand hectares of water areas have been cleared, hundreds of kilometers of littered shores have been eliminated[27].

Nevertheless, there are lags in the Omsk and Voronezh regions caused by a shortage of human resources and insufficient funding. The federal project "Integrated Municipal Solid Waste Management System (MSW)" is aimed

[25] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 14.01.2025) (In Russ.).
[26] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 15.01.2025) (In Russ.).
[27] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 20.01.2025) (In Russ.).

at creating a modern and efficient infrastructure for the separate collection, processing and disposal of waste. To date, separate collection systems have been introduced in 56 regions of the Russian Federation, and more than 130 modern waste sorting complexes have been built [11]. Nevertheless, systemic problems persist in several regions, including a low level of ecological culture among the population, insufficient motivation to participate in waste sorting, as well as a shortage of processing industry capacities. The federal project "Clean Country" is aimed at eliminating objects of accumulated environmental damage and carrying out reclamation of disturbed lands. More than 50 large unauthorized landfills have already been eliminated in the Chelyabinsk, Moscow and Tula regions, and measures have been taken to restore the territories and return them to economic circulation. However, in some industrialized regions, such as Norilsk, there are still significant difficulties due to both the technical complexity of the facilities and the scale of accumulated environmental damage, which requires the involvement of significant financial and human resources[28].

The general structure of financing for the national Ecology project is shown in fig. 3.

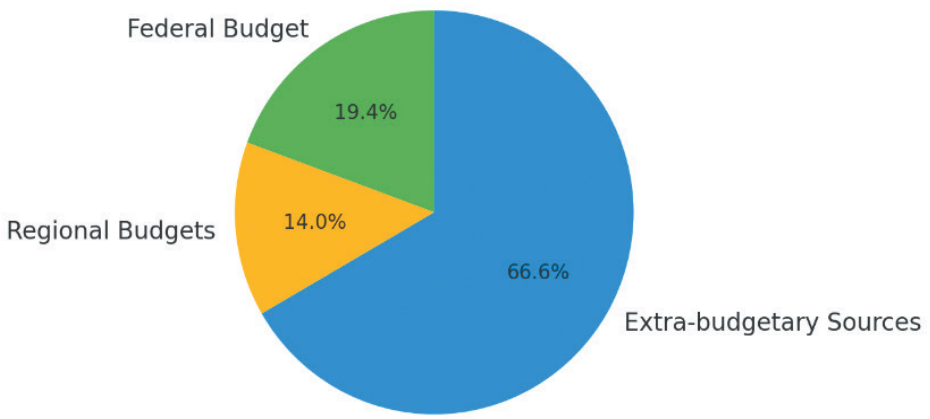

Fig. 3. Funding structure of the national project "Ecology", billion RUB

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan based on data[29] from the Passport of the National Project "Ecology", Ministry of Natural Resources and Environment of the Russian Federation.

An analysis of the implementation of the national Ecology project in the Russian Federation in 2019–2024 revealed significant differences in the effectiveness of measures at the regional and municipal levels. The most successful results were achieved in the regions where stable financing was provided, an effective system

[28] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 22.01.2025) (In Russ.).
[29] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 14.01.2025). (In Russ.).

of interdepartmental interaction was built, a stable professional personnel base was formed, and a high level of involvement of civil society and business representatives was observed. Positive examples are the Republic of Tatarstan, the Rostov and Nizhny Novgorod regions, where not only targets have been achieved, but also best practices of public-private partnership in the environmental field have been introduced. At the same time, systemic problems persist in several regions. These include a shortage of qualified specialists in the field of environmental protection, inefficient allocation of financial resources, delays in the disbursement of budget funds, as well as weak law enforcement practices regarding compliance with environmental standards. These problems are reinforced by existing bureaucratic barriers, insufficient coordination between levels of government, and limited educational and educational initiatives aimed at shaping the ecological culture of the population.

A positive trend in recent years has been the active introduction of digital platforms for environmental monitoring and reporting by polluting enterprises. Such tools increase the transparency of environmental policy and promote the involvement of public organizations in monitoring its implementation. In addition, there is a growing interest in environmental issues among young people, which is reflected in an increase in the number of volunteer movements, educational programs and specialized forums. However, the sustainability of the achieved results in the long term directly depends on the improvement of the regulatory framework, the continuation of technological modernization, as well as the active development of international cooperation. Global challenges such as climate change, geopolitical and foreign economic factors also have a significant impact, which must be considered when shaping and implementing the country's environmental agenda. The key results of the implementation of federal projects within the framework of the national Ecology project are presented in Table 4.

Table 4

Key results of federal projects implemented under the national project "Ecology"

Federal Project	Key Results
Clean Air	Emission reduction by 12%
Volga Recovery	Effluent discharge reduction by 23.9%
Forest Conservation	500 million saplings annually
Biodiversity and Ecotourism	24 protected areas, +3.7 million ha
Unique Water Bodies	15 thousand ha cleaned
MSW Management	130 complexes, 56 regions
Clean Country	50+ landfills eliminated

Source: compiled by G.A. Kulikovskaya, G.L. Gukasyan, G.S. Minasyan based on data[30] from the Passport of the national project "Ecology", Ministry of Natural Resources and Environment of the Russian Federation.

[30] Passport of the National project "Ecology". *Ministry of Natural Resources of the Russian Federation.* URL: mnr.gov.ru/docs/np_ecology/241022 (accessed: 14.01.2025). (In Russ.).

Discussion

The implementation of the Spatial Development Strategy of the Russian Federation until 2025 is carried out through national projects, the key among which are the "Comprehensive Plan for the Modernization and Expansion of the backbone Infrastructure" and "Ecology". Despite the difference in priorities, both projects are closely linked, as infrastructural development inevitably has an impact on the environment, requiring appropriate legal and environmental support. Continuing to consider the logic of the interconnection of national projects, it is necessary to proceed to the analysis of their objectives and implementation tools. Despite the difference in priorities, both projects are key elements of the State strategy aimed at ensuring balanced socio-economic and environmental development. KPMI provides for large-scale construction and modernization of transport, energy and engineering infrastructure.

The total amount of financing exceeds 6.3 trillion rubles, and key areas include the development of the BAM, Transsib, federal highways and ports. The National Ecology Project includes 11 federal projects aimed at reducing environmental pollution, protecting water resources, biodiversity, and developing a waste management system. Its implementation provided, in particular, a 12% reduction in air emissions, the creation of 24 new protected areas and the elimination of more than 50 large landfills [12].

Despite the difference in targets, the KPMI and Ecology projects are inextricably linked, which determines the need for their coordinated execution. The combination of transport development and environmental initiatives generates both positive and negative effects due to differences in priorities and implementation mechanisms. Thus, the advantages of implementing these projects include increasing the investment attractiveness of territories through the simultaneous development of infrastructure and improvement of the environmental situation. Examples of successful integration of infrastructure and environmental projects are: the reclamation of the Reftinskaya GRES ash dump in the Sverdlovsk region with the restoration of pine forest on an area of 440 hectares [13]; the construction of the Nizhne-Bureyskaya HPP in the Amur Region, accompanied by the creation of the Bureysky Nature Park with an area of 132 thousand hectares[31]; implementation of the Sakhalin Climate Experiment aimed at achieving carbon neutrality through gasification, the introduction of environmentally friendly transport and waste recycling infrastructure[32];

[31] *The Bureysky compromise.* URL: https://rushydro.ru/sustainable_development/environmental/ekologicheskie-proekt y/bureyskiy_kompromiss/?utm_source=yandex.ru&utm_medium=organic&utm_campaign=yandex.ru&utm_referrer=yandex.ru (accessed: 24.03.2025). (In Russ.).

[32] *The Sakhalin Experiment: the role of business in shaping climate policy.* URL: https://xn--80aapa mpemcchfmo7a3c9ehj.xn--p1ai/news/sakhalinskiy-eksperiment-rol-biznesa-v-formirovanii-klimaticheskoy-politiki/ (accessed: 18.02.2025). (In Russ.).

as well as the modernization of the Moscow Refinery with the launch of the Biosphere treatment complex, which reduced pollution levels by 75%[33].

Synergy between transport logistics and environmental initiatives is evident in the improvement of waste management systems, delivery of equipment for environmental projects, and support for forest restoration activities. For instance, RT-Invest allocated over RUB 230 billion to establish waste processing complexes and thermal waste treatment facilities in the Moscow region. Under the "Khartiya" (Charter) project, waste collection services are provided for 6.8 million people, resulting in the annual removal of approximately 3.1 million tons of solid municipal waste. Furthermore, logistics solutions play a crucial role in delivering equipment for reforestation efforts and reducing carbon footprints — particularly within the Sakhalin Climate Experiment.

The design and construction phases of infrastructure projects offer significant opportunities for integrating green technologies and sustainability standards. This includes the use of eco-friendly materials, energy-efficient solutions, and renewable energy sources. A notable example is the construction of Good Wood Plaza — Russia's first multi-storey wooden office building, standing at 19.75 meters and listed in the Russian Book of Records. In addition, the integration of photovoltaic panels into roof and façade designs is gaining popularity, enabling reduced electricity consumption and improved energy efficiency of buildings.

An important direction in advancing environmental goals involves expanding the participation of businesses and non-governmental organizations through concession agreements and public-private partnerships. In addition to direct investments, RT-Invest has installed 567 selective waste collection units ("fandomats") across 38 municipalities in the Moscow region. The "360" initiative by En+ Group mobilized more than 144,000 volunteers who collected over 4,500 tons of waste. Another successful case is the construction of the Narvinsky automobile tunnel with the involvement of ANO "Far Eastern Leopards" and private investors — designed to minimize disruption to the migration routes of the Amur leopard. These examples demonstrate the high effectiveness of collaborative approaches in addressing environmental challenges.

Despite significant progress in the implementation of environmental initiatives, certain difficulties remain that require special attention. Thus, there is a risk of replacing environmental goals with economic priorities and accelerated project implementation, as is observed during the construction of the second Severomuysky tunnel and the modernization of the Slyudyanka station, where environmental assessment was replaced by accelerated approval procedures,

[33] *The construction of an innovative Biosphere biological treatment plant complex has been completed at the Moscow Refinery.* URL: https://neftegaz.ru/news/vtrende/206391-na-moskovskom-npz-zaversheno-stroitelstvo-innovatsionnogo-kompleksa-biologicheskikh-ochistnykh-sooru/ (accessed: 24.01.2025). (In Russ.).

which led to the deforestation of specially protected forests near Lake Baikal and disruption of migration routes of wild fauna.

Decreased transparency in environmental oversight has occurred under the conditions of simplified approval procedures. In particular, Federal Laws No. 254-FZ and No. 124-FZ abolished the requirement for mandatory environmental impact assessments (EIAs) for certain projects within the framework of the Major Infrastructure Projects Regulation (KPMI). As a result, many initiatives have been implemented without comprehensive public evaluation of their environmental impacts. For example, the construction of the Ulak — Elga railway line in the Amur-Yakutia corridor and the development of tourism infrastructure on the Gamov Peninsula in Primorsky Krai proceeded without transparent approval procedures, despite their potentially significant effects on regional ecosystems. This situation has led to concrete environmental problems: in the Ulak — Elga area, there was documented disruption of the hydrological regime of wetlands, interference with waterfowl migration, and an increase in erosion processes on slopes.

In Primorye, construction work on the Gamova Peninsula has led to the destruction of coastal ecosystems, increased stress on protected areas and increased anthropogenic pressure on populations of the Far Eastern leopard and Amur tiger. Potential deterioration of specially protected areas during construction without environmental impact assessment; in particular, such risks have been realized during the construction of transport infrastructure facilities near Lake Baikal, where cases of deforestation of protective forests and violations of the coastal water balance have been recorded. A similar situation was observed in the AYAM (Ulak — Elga) region, where the laying of railway tracks caused the degradation of wetlands and loss of biodiversity.

In Primorsky Krai, the construction of the Narva autotunnel without proper environmental and legal support contributed to the fragmentation of the habitat of the Far Eastern leopard. These facts demonstrate the need for a comprehensive environmental impact assessment when planning any projects in protected areas. The limited capacity of regions and local communities to influence federal-level decisions is reflected in the practice of making key infrastructure decisions without considering the opinions of regional environmental organizations and the public. Thus, during the implementation of the BAMA modernization project in the Republic of Buryatia, appeals from local authorities and NGOs regarding threats to the Tunka National Park were repeatedly ignored[34]. The similar situation is observed in the Irkutsk region, where decisions on laying additional railway tracks are made at the federal level without proper coordination with municipal

[34] *Buryat Kushtau. The Feds are in no hurry to save the Siberian National Park.* URL: https://dailystorm.ru/vlast/buryatskiy-kushtau-federaly-ne-speshat-spasat-sibirskiy-nacionalnyy-park (accessed: 25.01.2025) (In Russ.).

authorities and without holding public hearings, which causes protests from local residents and environmentalists[35].

Federal Laws No. 254-FZ (2020)[36] and No. 124-FZ (2022)[37] introduced simplified procedures for approving design documentation for KPMI facilities, including the possibility of construction within the boundaries of specially protected natural areas (protected areas), without mandatory environmental assessment. The adoption of these laws has significantly accelerated the implementation of transport projects, reducing the time required to issue permits by an average of 30–40%. At the same time, this led to a weakening of environmental control mechanisms, the de facto exclusion of the public from the environmental impact assessment (EIA) procedure, as well as an increase in the number of complaints from environmental organizations about non-compliance with environmental legislation at the early stages of project implementation. In practice, this is reflected in an increase in the number of violations of the environmental regime in protected areas and a decrease in transparency in the process of making urban planning decisions. In particular, according to Rosprirodnadzor, in 2023 the number of detected environmental violations increased by a third compared to 2022 (from 11,967 to 15,367 cases), which is largely due to the active phase of the implementation of infrastructure projects in the regions. At the same time, the number of administrative penalties was almost halved (from 10,104 to 5,479)[38], this indicates a decrease in the effectiveness of law enforcement practice.

Such trends suggest that the relaxation of environmental procedures in the implementation of the KPMI contributes to an increase in violations in the field of environmental protection. The gap between the territorial planning documents and the territory planning projects within the framework of the implementation of the KPMI creates legal uncertainty.

The documentation on the planning of the territory acquires the status of the main title document, displacing coordination at the level of strategic planning and ignoring the principles of environmental sustainability. For the harmonious development of the country, it is necessary to ensure a sustainable combination

[35] *The cities of the Angara region are embarking on the path of environmental protest.* URL: https://imenabratska.ru/goroda-priangarya-vyxodyat-na-tropu-ekologicheskogo-protesta/ (accessed: 14.01.2025) (In Russ.).

[36] Federal Law No. 254-FZ of July 31, 2020 "On Specifics of Regulating Certain Relations for the Purpose of Modernizing and Expanding Mainline Infrastructure and on Amendments to Certain Legislative Acts of the Russian Federation". URL: http://www.kremlin.ru/acts/bank/45782 (accessed: 17.01.2025). (In Russ.).

[37] Federal Law No. 124-FZ of May 1, 2022 "On Amendments to the Urban Planning Code of the Russian Federation and Certain Legislative Acts of the Russian Federation". URL: http://www.kremlin.ru/acts/bank/47786 (accessed: 15.01.2025). (In Russ.).

[38] *Report on the activities of the Federal Service for Supervision of Natural Resources in 2023.* URL: https://rpn.gov.ru/upload/iblock/da8/x8cgrbq0y6fk8ziy6cdmf51s9e09nk9q/Doklad-2023-1.pdf (accessed: 14.01.2025) (In Russ.).

of infrastructural progress and conservation of natural systems. This requires a comprehensive approach that includes several important measures.

First, it is necessary to restore the mandatory state environmental assessment for all projects implemented within the boundaries of protected areas and valuable ecosystems. For example, the already mentioned lack of a full-fledged impact assessment during the construction of the Narva auto tunnel in Primorye led to a violation of the migration routes of the Far Eastern leopard. Such situations could have been avoided with strict expertise. A comprehensive environmental impact assessment (EIA) at the strategic planning stage is equally important. Projects such as the Ulak — Elga line demonstrate that the lack of early EIA leads to irreversible consequences — degradation of marsh ecosystems and increased soil erosion. The implementation of this practice at the design stage will minimize environmental risks. Transparency and public oversight are another key aspect.

The limited access to documentation on the expansion of the BAM in the Slyudyanka area has caused criticism from environmentalists and reduced confidence in the project. Digitalization of data and openness of discussions will help to increase the responsibility of developers and involve citizens in decision-making. Special attention should be paid to the mechanisms of compensation for damage to nature.

A successful example is the reclamation of the Reftinskaya GRES ash dump, where a new forest area was created in the contaminated area. This approach, known as ecological renovation, should become mandatory for projects affecting natural landscapes. Finally, it is important to legislate the immutability of the boundaries of protected areas in the interests of construction.

Precedents such as the adjustment of protected areas near Lake Baikal pose threats to unique ecosystems and contradict Russia's international obligations, including agreements with UNESCO. Integration of infrastructure initiatives with the national Ecology project is impossible without coordination of their goals and mechanisms. It is impossible not to recall the famous book by the American economist, winner of the Nobel Prize in Economics in 1993 (together with Douglas North) Robert Fogel's "Railroads and American Economic Growth: Essays in Econometric History" (Railroads and American Economic Growth: Essays in Econometric History, 1964) [14], where, without denying the importance of railroads to the U.S. economy, he showed that their importance should not be exaggerated, that in order to ensure that large-scale infrastructure projects lead to a qualitative leap in the economy, we need institutional support and a systematic approach to economic growth and territorial development. Consideration of environmental priorities in urban planning and transport policy is a necessary condition for the sustainable development of the country and the fulfillment of its global obligations. The legal framework should unambiguously establish the priority of nature protection as the basis for the long-term well-being of society

and the economy. Thus, only a systematic approach combining expertise, planning, transparency, compensation for damage and protection of protected areas will allow Russia to develop infrastructure without harming the environment.

Conclusion

The integration of the KPMI and Ecology national projects opens up significant prospects for the integrated spatial and sustainable development of the Russian Federation. Formed as priorities until 2030, these initiatives have become the basis of the state's transformational strategy in the face of climate and infrastructural challenges. Large-scale projects aimed at modernizing the BAM and Transsib, developing new hub logistics centers and electrifying sections of the federal transport network entail significant anthropogenic impacts, especially in areas with special environmental regimes. The Baikal Natural Territory, Seaside parks, ecosystems of the Amur-Yakutsk Highway (AMR) and the Arctic zones are the most sensitive regions where environmental violations caused by the lack of an EIA and the weakening of environmental expertise have been recorded.

Nevertheless, with an integrated and coordinated approach, it is possible to form a sustainable model of interaction between infrastructure modernization and environmental protection. Examples of such solutions have already been implemented: the Biosphere project at the Moscow Refinery, which reduced water intake by 2.5 times and purified wastewater by 99.9%; the 360 initiative of En+ Group with the participation of 144 thousand volunteers in 60 regions; environmental support for the Nizhne-Bureyskaya HPP and the carbon experiment on Sakhalin. Ensuring a balance is possible only under the condition of regulatory strengthening of environmental procedures. It is necessary to restore the mandatory state environmental assessment for all facilities affecting specially protected areas, as well as to introduce the mandatory strategic impact assessment (EIA) in the development of large infrastructure projects. This can be implemented through the regulatory consolidation of standard requirements in the Urban Planning Code of the Russian Federation and by-laws of the Ministry of Natural Resources and Environment.

The development of environmental renovation mechanisms may include mandatory restoration of disturbed natural complexes after completion of construction work, by analogy with the Reftinskaya GRES reclamation project. Digitalization of monitoring can be implemented through the introduction of a single geographic information portal with data on the environmental status of regions and the stages of project implementation. It is also necessary to strengthen public control mechanisms by giving environmental NGOs the right to appeal decisions on the implementation of projects that violate environmental regulations. As an example, the inclusion of the public in the coordination of tourism projects

in the Baikal territory, where the active participation of local initiatives allowed the suspension of the construction of hotel complexes on particularly valuable parts of the coast. Constructive interaction between the government, business and society is a key factor in achieving the goals of transport and environmental modernization of the country in the context of international obligations, the climate agenda and the need to preserve natural capital for future generations.

REFERENCES

1. Naidenov VS., Bazhal YuN, Erokhin SA. *Planirovanie intensivnogo razvitiya obshchestvennogo proizvodstva* [Planning of intensive development of social production]. Moscow: Vysshaya shkola publ.; 1990. (In Russ.).
2. Zhang Y, Cheng L. The role of transport infrastructure in economic growth: Empirical evidence in the UK. *Transport Policy.* 2023;133:223–233. https://doi.org/10.1016/j.tranpol.2023.01.017 EDN: ENRZSL
3. Ivanov MV. *Razvitie transportnoi infrastruktury regiona: faktory, napravleniya, instrumentarii otsenki* [Regional transport infrastructure development: factors, directions, assessment tools]: abstract of dissertation. Nizhnii Novgorod; 2016. (In Russ.). EDN: BVJFMF
4. Macheret DA. Economic notes on the Russian railroads. *Otechestvennye Zapiski: The Journal of Russian Thought.* 2013;(3):162–178. (In Russ.). EDN: RWIPDT
5. Gol'skaya YuN. *Otsenka vliyaniya transportnoi infrastruktury na sotsial'no-ekonomicheskoe razvitie regiona* [Assessment of the impact of transport infrastructure on the socio-economic development of the region]: abstract of dissertation. Ekaterinburg; 2013. (In Russ.). EDN: SUOROB
6. Lednei AYu. *Razrabotka metodicheskikh podkhodov k otsenke ekonomicheskoi effektivnosti razvitiya transportnoi infrastruktury s uchetom ob"emov i neravnomernosti perevozok* [Development of methodological approaches to assessing the economic efficiency of transport infrastructure development taking into account the volume and unevenness of transport operations]: abstract of dissertation. Moscow; 2020. (In Russ.). EDN: YYRNLB
7. Uskova TV. Transport infrastructure as a factor of territories' development and connectedness of economic space. *Problems of Territory's Development.* 2021;25(3):7–22. (In Russ.). https://doi.org/10.15838/ptd.2021.3.113.1 EDN: YMRLLI
8. Tong Q, Zhang L, Liu J. Transportation infrastructure and common prosperity from the perspective of Chinese-Style Modernization: Enabling effects and advancement paths. *Sustainability.* 2024;16(4):1677. https://doi.org/10.3390/su16041677 EDN: PIVROK
9. Lebedeva MA. Problems of implementation of the national project "Ecology" in Russian Federation. *Zhurnal ekonomicheskikh issledovanii.* 2022;8(6):17–24. (In Russ.). EDN: BKSIJH
10. Gamsakhurdiya OV, Nazarenko EB. Problemy i perspektivy vosstanovleniya lesov v moskovskom regione [Problems and prospects of reforestation in the Moscow region]. *Strategiya ustoichivogo razvitiya regionov Rossii.* 2016(31):17–25. (In Russ.). EDN: VSAZFF
11. Krivonosova OYu. Strategic directions for the conservation of species diversity: problems of legal regulation. *Vestnik Universiteta imeni O.E. Kutafina.* 2023;(3):148–154. (In Russ.).
12. Nagova DE. Implementation of the national project "Ecology" for the purposes of sustainable forest management: regional aspect. *Kontentus.* 2019;(S11):482–487. (In Russ.). EDN: EXDMMR
13. Zalesov SV, Opletaev AS, Terin AA. Formation of artificial plantations of pine (pinus sylvestris L.) during the remediation of the ASH DUMP. *Agrarian Bulletin of the Urals.* 2016;(8):15–23. (In Russ.). EDN: WXBACL

14. Fogel R. *Railroads and American economic growth: Essays in econometric history.* 1964. URL: https://archive.org/details/railroadsamerica00foge/page/n9/mode/2up (accessed: 16.03.2025).

Information about the authors:
Galina A. Kulikovskaya — Senior Lecturer at the Department of Public and Municipal Administration, RUDN University, 6 Miklukho-Maklaya st., Moscow, 117198, Russian Federation (ORCID: 0000-0003-2351-1711) (e-mail: kulikovskaya-ga@rudn.ru).
Gurgen L. Gukasyan — Candidate of Economic Sciences, Associate Professor at the Department of Public and Municipal Administration, RUDN University, 6 Miklukho-Maklaya st., Moscow, 117198, Russian Federation; Leading Researcher, Institute of Oriental Studies of the Russian Academy of Sciences, 12 Rozhdestvenka st., Moscow, 107031, Russian Federation (SPIN-code: 6071-7519) (Scopus ID: 57191675471) (ResearcherID: A-9072-2017) (ORCID: 0000-0001-5930-6870) (e-mail: gukasyan_gl@pfur.ru).
Garush S. Minasyan — Candidate of Political Sciences, Assistant Lecturer at the Department of Public and Municipal Administration, RUDN University, 6 Miklukho-Maklaya st., Moscow, 117198, Russian Federation (SPIN-code: 3619-2102) (ORCID: 0009-0006-3935-8693) (e-mail: minasyan-gs@rudn.ru).