

# Sustainable Development of Cities of Russia

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**Abstract:** Today, amid the COVID-19 pandemic, the sustainable development agenda is in focus from a new perspective. The issues of inequality, social development and the environmental agenda, on the one hand, as well as the topics of transparency, effective interaction of various interested parties to overcome common global challenges, on the other hand, are becoming more and more relevant. The purpose of the work is to identify leaders and outsiders of sustainable development among Russian cities to distinguish promising areas of their growth, to identify the most balanced among them in the development of the economy, social area and ecology. The characteristics of cities are given in five main blocks: economic development, urban infrastructure, demography, social infrastructure, ecology. The main sources of information for compiling the Ranking were the data of state statistics presented on the Internet resources of Rosstat, EMISS and the municipal administrations' websites, the results of various Rankings/indices of cities and regions of the Russian Federation. Based on the results of the Ranking, appropriate conclusions were made and key directions for the development of regions were proposed.


## 1 INTRODUCTION


Urbanization and the formation of large urban agglomerations are among the most important trends in world development. Every year, the world's urban population is increasing by tens of millions of people and will reach 60% of the world's population by 2030. Cities produce most of the world's GDP, concentrate the main financial and human resources, and are centers for the development of science and innovation, modern technologies.


The development of urbanization processes leads to an aggravation of a number of social and economic problems of large cities associated with overpopulation, growing economic inequality, the gap between the rates of population growth and infrastructure development, the need to ensure employment of the population in cities in the context of technological progress and structural economic changes. At the same time, modern urban ecosystems are sources of large-scale negative impacts on the environment. The urban population of almost 3.5

billion people occupies only 3% of the earth's land area and consumes more than 70% of all energy, forms about 70% of carbon dioxide emissions.

At the beginning of the second decade of the XXI century, the global economy was hit by two crises at the same time: the coronavirus pandemic and the collapse in hydrocarbon prices, primarily crude oil (Dynkin and Telegina, 2020). The imposition of a double external shock - the coronavirus pandemic and the global economic downturn - on the problems and contradictions that have accumulated in the world makes it necessary to evaluate the justified and unjustified ideas and solutions of the past with particular care (Fituni and Abramova, 2020). A number of economically developed countries associate the possibilities of overcoming the consequences of the crisis caused by the pandemic with the development of a low-carbon economy and a "green" agenda. Thus, one of the key priorities of the EU economic recovery plan, approved in July 2020, is the development of a "green" economy and the implementation of the European Green Deal. This plan calls for a reduction in carbon emissions to zero

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by 2050. Note that the implementation of the "green" agenda has become popular not only in Europe, but also in countries such as Canada, South Korea, and other leading world economies. In 2021, the implementation of the "green" agenda in the United States has noticeably intensified. The development of a low-carbon agenda was also updated at the level of international associations of cities, such as the C-40 group (only Moscow is included in the group out of all the Russian cities).

In September 2020, 12 cities in this group signed the Declaration to refuse fossil fuels and invest in a sustainable future. Signatory city governments have pledged to phase out fossil fuel companies and have advocated increased sustainable investment in climate solutions, including job creation, to accelerate economic recovery from the COVID-19 pandemic.

At the UN Conference in Rio de Janeiro ("Rio+20"), it was stated that the Sustainable Development Goals: - are a useful tool to focus efforts on achieving specific development results within the overall development vision; - aimed at defining national priorities and mobilizing interested parties and resources to address common challenges; - should facilitate the full implementation of the decisions of all major summits on economic, social and environmental issues; - serve as the basis for United Nations development activities.

The monitoring and reporting system for the implementation of the SDGs in Russia is currently at the formation stage. The collection of data on most of the national SDGs indicators is provided only at the federal level so far. Therefore, the regions and cities lack the motivation, as well as the qualifications of public servants and the experience to draw up such reports. Thus, the first regional report on progress in achieving the SDGs in 2019 in Russia was compiled in the Rostov region. It was prepared on the initiative and with the support of a leading regional bank actively promoting the sustainable development agenda and ESG in its activities. Also in 2019, within the framework of the UN international forum, the report of the Republic of Tatarstan on the SDGs was presented.

As international practice shows, the development of the SDGs agenda at the local level is possible according to two main scenarios - as part of a unified monitoring system enshrined in national legislation, or as a "from below" initiative by the city administration based on discussions with key interested parties and taking into account an external demand.

Note that in Russia the business community is the key vehicle for the sustainable development agenda.

Large Russian companies - business leaders integrate the goals of the Agenda-2030 into their strategies and reflect aspects related to the implementation of the SDGs at the program and project level. Disclosure of information is one of the most important tools for companies to interact with interested parties and contributes to increased transparency and image improvement, attracting investment. The logic of the process development and the use of tools of the non-financial reporting system of companies can be used for cities as well.

## 2 RESEARCH METHODOLOGY

To draw up the Ranking, an integral indicator was compiled - the Urban Sustainable Development Index (USDI). This index was calculated on the basis of 43 statistical indicators characterizing the development of the city in five main blocks: economic development, urban infrastructure, demography, social infrastructure, and ecology. The methods of the performed research contain theoretical and empirical parts, description methods. This research is supported by graphical methods of illustrating the data.

## 3 RESULTS OF RESEARCH

Leading cities of the Ranking

The three leaders of the SD Ranking for 2019 include Moscow, the capital and largest economic center of Russia, and the two most dynamically developing regional centers - Krasnodar and Tyumen. Krasnodar in 2018 in terms of population reached the mark of 1 million inhabitants. Tyumen is characterized by high population growth rates and is approaching this mark faster than other Russian cities. The unevenness of the spatial distribution of the leading cities of the Ranking across the territory of the country should be noted. In the Center of the European part of Russia, in the Volga region and in the Urals, there are noticeably more of them than in the South of the country, in Siberia, and in the Far East. The composition of the cities leading in the Ranking - TOP-30 - has remained practically stable over the past 4 years, although the positions of specific cities within this group may vary within several points (Figure 1).

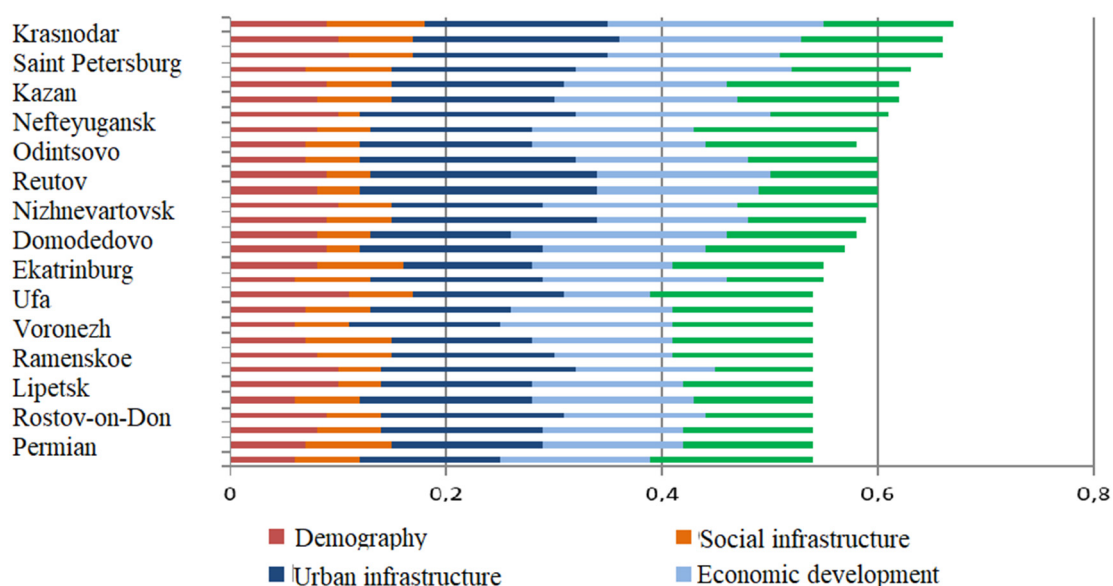


Figure 1: Leading cities of the SD Ranking in 2019.

In the group of Russian leading cities, one can conditionally distinguish four groups of cities, each of which has its own characteristics of development:

- capitals and million-strong cities;
- regional centers;
- cities of the Moscow region;
- centers of the oil and gas industry.

Among the leaders of the Ranking, large cities prevail, for which the determining factor of leadership is the balance in the development of all areas of city life: economic, social and environmental, and not the population as such. In turn, a number of million-strong cities (Novosibirsk, Volgograd, Chelyabinsk, Omsk), despite the high values of some basic indicators of economic development, did not even make it to the TOP-50 cities of the Ranking due to negative demographic trends, environmental problems and low assessments of the state of urban infrastructure. Let's analyze the main factors that determine the high positions of cities in each group.

Million-strong cities

The list of million-strong cities included in the TOP-30 cities of the SD Ranking has not changed over the past four years. This group includes 9 out of 16 Russian million-strong cities: the capitals (Moscow, St. Petersburg), the largest cities of the Urals (Yekaterinburg), Central Okrug (Voronezh), two cities of the Southern Okrug (Krasnodar, Rostov-on-Don), and three cities of the Volga Federal Okrug (Kazan, Ufa, and Perm).

The leading positions of the two capitals in the Ranking are quite natural and can be explained both

by their special status (these are not only cities, but also are federal subjects), and economic and administrative resources. Moscow and St. Petersburg are several times ahead of other Russian million-strong cities, primarily in terms of population and financial capabilities. Of all Russian cities, they are the most consistent with the criteria of a “global city” and are comparable to European and world capitals in terms of social and economic development.

Let's designate the key factors that determine their high positions in the SD Ranking of cities:

- relatively high investment attractiveness;
- high potential for the development of modern high-tech industries and digital services;
- availability of budgetary opportunities to maintain and modernize urban and social infrastructure;
- attractiveness for intraregional and interregional migration (with the exception of Voronezh, Perm and Ufa);
- a diversified labor market - the presence of both large industrial enterprises and a developed service sector;
- relatively high rates of housing construction and renovation of the housing stock; the possibility of obtaining high-quality secondary and higher education;
- relatively high purchasing power of the population.

Distribution of leading cities of the SD Ranking by federal districts

In each federal district, cities can be distinguished, characterized by a balance of economic, social and environmental development, which attract people

from other cities and regions. They can be both large and medium-sized in terms of population (Table 3).

Table 3. Distribution of leading cities of the SD Ranking by federal districts.

Federal district	Groups of cities by population					
	more than 500 thousand people		250-500 thousand people		less than 250 thousand people	
	City	Rank	City	Rank	City	Rank
Central	Moscow	1	Krasnogorsk	7	Odintsovo	9
	Voronezh	23	Mytishchi	10	Reutov	12
	Tambov	28	Belgorod	17	Domodedovo	15
Northwestern	St. Petersburg	Kaliningrad	5	Ukhta	68	8
		Syktvykar	54			
		Vologda	58			
Volga	Kazan	6	Yoshkar-Ola	65	Almetyevsk	19
	Ufa	18			Nizhnekamsk	36
	Cheboksary	22			Novokuibyshevsk	60
Ural	Tyumen	2	Surgut	13	Nefteyugansk	8
	Yekaterinburg	16	Nizhnevartovsk	14	Tobolsk	21
					Novy Urengoy	25
Siberian and Far Eastern	Khabarovsk	42	Yakutsk	44	Yuzhno-Sakhalinsk	11
	Krasnoyarsk	48	Blagoveshchensk	59	Petropavlovsk-Kamchatsky	69
	Tomsk	52				
South and North Caucasian	Krasnodar	3	Stavropol	20	Anapa	53
	Rostov-on-Don	26	Novorossiysk	51	Nazran	67
	Sochi	56				

#### Cities at the bottom of the Ranking

In general, the composition of the group of cities closing the SD Ranking (25) has remained relatively stable for several years, although some changes are taking place within this group. Twenty-five positions in the lower part of the SD Ranking are occupied by ten industrial centers of the Urals and Western Siberia, which have the status of mono-cities (Prokopyevsk, Kiselevsk, Pervouralsk, Serov, Belovo, Leninsk-Kuznetsky, Miass, Mezhdurechensk, Zlatoust, Sarapul); a number of cities without the status of a mono-city, but with similar social and economic problems (Novoshakhtinsk, Rubtsovsk, Shakhty, Murom, Kopeisk, etc.) and several cities of Crimea (Yalta, Feodosia, Evpatoria). Of all the regional centers, this group includes only the capital of Buryatia, Ulan-Ude (Figure 2).

The main factors that determine the low positions of the outsider cities in the Ranking are the same for most of them:

- high subsidization of local budgets;
- low investment attractiveness, lack of financial opportunities to upgrade communal and social transport infrastructure, low incomes of the population, limited employment opportunities;
- low diversification of the economy (for mono-cities - poor development of the service sector, for Crimean cities - poor industrial development);
- natural decline, mass outflow (with the exception of Ulan-Ude and Crimean cities), aging of the population;
- poor quality of the urban environment, a high degree of deterioration of the urban infrastructure;
- underdevelopment of modern industries, innovations, digital services;
- low quality of secondary education, limited opportunities for obtaining higher education.

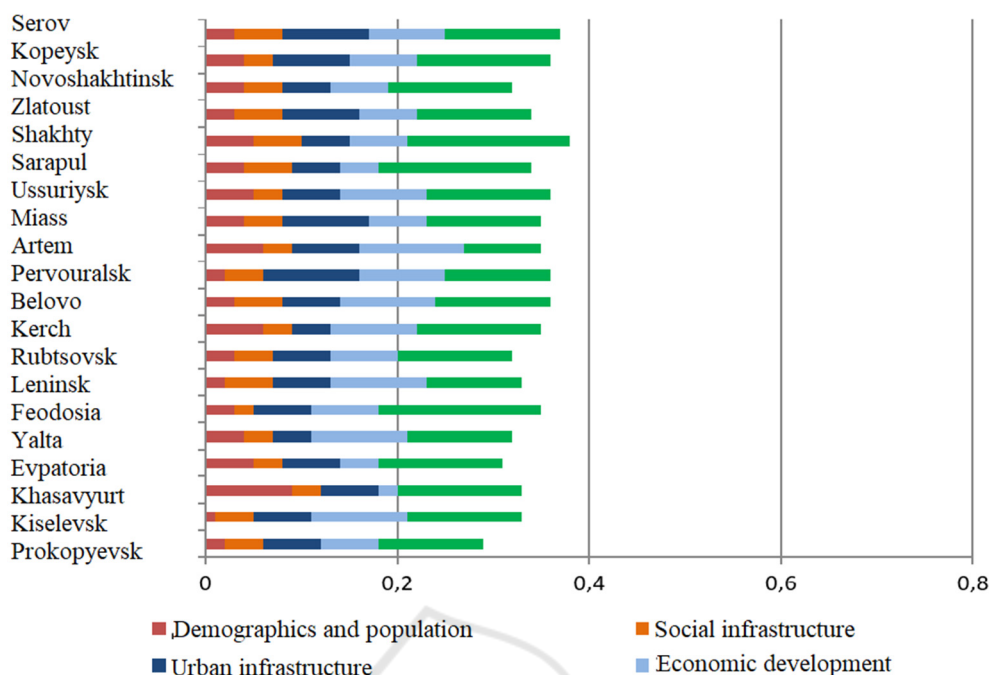


Figure 2: Lowest 20 Cities in the SD Ranking in 2019.

In these cities, there are practically no large companies that pay great attention to social investments in the territory of their presence. For most cities-outsiders, the low purchasing power of the population and stable depopulation determine the low rates of housing construction. Although, we should note that specifically in 2019, housing commissioning in most cities of this group has increased, which can be partly explained by the success of federal mortgage programs. In the cities of Crimea, where the rate of housing construction on average, on the contrary, has been significantly higher in recent years than in other cities of this group, housing commissioning has noticeably decreased in 2019 (especially in Yalta - by 60% and in Yevpatoria - by 40%), the exception was Kerch.

Most of the industrial centers that occupy the lowest positions in the Ranking are characterized by acute environmental problems caused by the activities of their 21 city-forming enterprises, first of all, we are talking about metallurgical centers and cities of the coal industry. For non-gasified cities of Eastern Siberia and the Far East, the use of non-environmentally friendly fuels plays an important role in air pollution. Cities such as Ulan-Ude, Belovo, Novoshakhtinsk, Prokopyevsk, Shakhty and a number of others received one of the lowest rankings in terms of urban space greening in the Urban Environment Quality Index.

If we talk about the cities of Crimea, the air quality in them, on the contrary, is much better than the national average, and Crimea as a whole is among the most environmentally friendly and tourist attractive regions of the country. At the same time, every year in the cities of Crimea, problems with water resources are aggravated. Note that this factor is not directly taken into account in the Ranking.

#### 4 RESULTS AND DISCUSSION

Thus, we can conclude that the TOP-5 leading cities of the SD Ranking for 2019 did not change and includes Moscow, Krasnodar, Tyumen, St. Petersburg, and Kaliningrad. The group of leaders consists of four types of Russian cities: million-strong cities, successful regional centers, cities of the Moscow region, and centers of the oil and gas industry. Almetyevsk, Lipetsk and Tambov returned to the TOP-30 leaders of the Ranking in 2019, while Obninsk, Orenburg and Khimki left it.

There is a high degree of correlation between the development of regional centers and major cities and the level of development of the regions in which they are located. Most of the cities from the TOP-30 Ranking are located in regions with a high level of social and economic development, and the regional centers with the lowest positions in the SD Ranking

are located in the most depressed regions of the country.

The result analysis of the Ranking indicates the importance of the quality of education and the development of human capital for the development of cities. Cities with a high level of higher and secondary education occupy high positions in the Ranking and have a higher potential for sustainable development and migration attractiveness in the medium term.

In a year, no more than 15% of 185 cities change their position in the Ranking by more than 30 positions. A significant change in the positions of cities is determined by 3-5 indicators from various blocks (economic development, urban infrastructure, social infrastructure).

The lowest positions in the Ranking are occupied by single-industry cities, old industrial centers, and a number of Crimean cities. All of them demonstrate the absence of stable positive dynamics, allowing them to get out of the ranks of outsiders in the Ranking.

The results of the Ranking in 2019 allow us to assess with what parameters of development Russian cities approached the economic crisis of 2020. In the context of the COVID-19 pandemic, the importance of assessing social infrastructure and the level of digitalization of cities has grown. The public demand for a new quality of the urban environment is growing, in which the priority of the criterion of its safety, as well as the availability of infrastructure and the development of effective communication systems, is increasing.

Preliminary data on the state of the economy of Russian cities for 2020 show that the largest negative impact of the economic crisis caused by the COVID-19 pandemic has had on the largest cities of the country (capitals, cities with a population of over one million). At the same time, this group of cities, due to their scale, have the resources for a faster economic recovery. At the regional level, the best economic dynamics during the crisis period is demonstrated by the most developed regions, which have accumulated a greater margin of safety due to balanced development.

Important drivers of the development of Russian cities in the new realities will be:

- the formation of new high-tech industries; smart technology adoption and digital transformation; improving energy efficiency;
- development of modern systems of education and health care;
- improving human capital; improving the quality of the urban environment.

The development of remote forms of employment in Russia will contribute to a certain reformatting of migration flows within the country and the consolidation of the population in cities with a high quality of life, developed urban and social infrastructure, even if the local labor market is poorly developed in these cities. New factors on the external agenda and expanding the horizons for the implementation of National Projects until 2030 create new challenges for the strategic planning of Russian cities in general and necessitate adjusting the existing strategies for social and economic development at the regional and city level, taking into account the sustainable development agenda.

## 5 CONCLUSION

It is difficult to single out any goals in the area of sustainable development, all goals and objectives are important. Moreover, they are interconnected - sustainable development presupposes the unification of all three aspects of the population's life - social, economic, environmental. As the analysis of materials for the preparation of the Russian Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development has shown, there are so-called "points of growth" for each SDG. These are the tasks that need to be solved in order to further achieve the goals set at the international level. For example, this are both the acceleration of the growth of labor productivity, and the elimination of differences in the distribution of incomes of the population, including in the regional context.

In recent years, Russia has shown significant progress in achieving these SDGs.

The Russian government has proposed and implemented a number of state support measures to minimize damage from the pandemic in the main industries and the social area.

According to the Recovery Plan, in 2020-2021, it is planned to allocate about five trillion rubles to support the national economy and population. On July 14, 2020, the presentation of the first Russian Voluntary National Review of the Implementation of the 2030 Agenda for Sustainable Development took place. During this presentation, the Minister of Economic Development of the Russian Federation Maxim Reshetnikov informed that 3.26 trillion rubles out of this amount are provided for social support of the population; support for small and medium-sized businesses, as well as backbone companies and enterprises from the most affected sectors of the economy; to provide government guarantees; to

support and balance the budgets of the subjects of the Russian Federation.

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