Planning organization of the Rostov region as a basis for sustainable socio-economic and territorially-spatial development of the area

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ABSTRACT

The purpose of the research is to study urban planning development in the Rostov region territory and elaboration of proposals on the main investment development directions. On the basis of analytical studies and comparative analysis of the socio-economic development of the individual parts belonging to the given area, there were generated scientifically sound methods of urban planning transformations and provided practical recommendations for sustainable development of the territory, management and improvement of the population’s living standards.

INTRODUCTION

With the recovery in Russia of market economy, private land and real estate ownership, territory development management by means of old administrative methods becomes impossible. It is also clear that it is wrong to rely solely on the market-based self-regulation of urban planning activity, which should be set in a civilized framework for the implementation of environmental, social, and cultural priorities. Moreover, the changes required for the implementation within the urban planning activity in no way can be reduced only to the introduction of legal regulation methods set forth in the Urban Planning Code of the Russian Federation: it is necessary to formulate the idea of urban planning as a system of activities, purposes and methods of its regulation adequate to contemporary realities [1].

By controlling the urban planning system parameters, it is possible to most effectively manage the development of the territory as a whole, if the urban development aspect will not be reduced to a purely planning one, and will be integrated with social, cultural, economic and environmental aspects [2].

An important tendency is the regionalization of urban development activities that had started in Russia in the early 90-ies of the last century. It implies that the development strategy of urban planning systems, all aspects of urban development planning and regulatory areas are developed within the region (subject of the Russian Federation) by a team of specialists in various fields, which is monitoring the urban planning systems, systematization of information, development of territorial planning and urban design programs and documents, ongoing management of urban development activities. Regionalization does not mean the self-disengagement of the state; on the contrary, it implies its active organizational, methodological and financial assistance. At such statement of a question, there is activated the necessity for bring together all the efforts exerted by the involved into the city development scientists of various specialties and practitioners-planners; in the systematization of the accumulated over many years, but incomplete and useless in practice scientific information (geographic, ecological, socio-economic, historic-cultural, regional national history, etc.). Without this, under the condition of a large, non-uniform territory, the city regulating activity will be reduced to formalities and may even become a brake for the development of positive processes in the field of urban planning.

Management of the region’s or city’s territorial development is a part of the general system of country administration, which in the modern world is built on a rigorous scientific basis. The beginning of the XXI
century is associated with the search for effective forms of management, which is becoming an important factor for the successful socio-economic development of the society.

Modern scientific consciousness moves from the concepts of progressivity and the straightness of the social system development, of the absolute order value, of the complete predictability of phenomena and processes to the understanding of the non-linearity and cyclical nature of the development processes, to the necessity of a certain degree of the system’s disorder to maintain its vital activities. It is therefore constructively concluded that the hard rectilinear control of complex systems is completely ineffective. Moreover, it is has been proved that complex systems are capable of survival and long-term, relatively conflict-free operation only if they are managed on the principles of self-development. The stability of such systems is provided not by a rigid vertical hierarchy, but the developed horizontal connections between the various elements [3].

In 2008, the outbreak of the global economic crisis changed the pace of economic development and led to a change in the understanding of the territory development within the new environment.

Main part:

Under these conditions, in the first place at an urban development planning extensive and almost completely assimilated territory in the Rostov region comes the coherence and cohesion of all design decisions with the interests of the population, business elite and all levels of government, which caused the need to implement the adjustment schemes of territorial planning of the Rostov region.

Analyzing the results of socio-economic development of the Rostov region, the main tendencies, directions and conditions of the world, Russian and district economy, as well as taking into account the uniqueness of the potential, the specifics of problems and risks of development, the Rostov region mission can be formulated as the follows: "Rostov region is the administrative and innovation-technological center of the south and the Central Black Earth region of Russia, as well as the bordering territories of the CIS that provides sustainable economic and spatial development, a high level and quality of life of the Rostov region" [4].

The mission aims to unite and serve as the integrating basis of effective interaction of people, businesses and public authorities in creating the best conditions for life in the Rostov region and strengthen its position as administrative, innovation and technological, financial and socio-cultural core in the influence region with a high level of human capital development, powerful scientific and educational potential and diversified economy. Strategically important and necessary is to provide conditions for the continuous improvement of the quality of life through the usage of innovations in the socio-economic sphere, territorial development, preservation of public health, progressive development of education, health, culture and sports [5].

Key goals and objectives of the region:

1. Providing the opportunities for sustainable development in the face of fierce competition for resources, both at the regional level and in the context of the international division of labor.
   Focusing on internal resources, as well as contemporary natural, economic and social potentials.
2. Improving the economy competitiveness of the Rostov region:
   - Development of key systems and sectors of the economy;
   - Infrastructural development of the area;
   - Development of services;
   - Reduction of the subsidization level.
3. Spatial development of the region:
   - Transport frame formation within the area, linking the major urbanized districts into supporting urban development body and providing free access to the system of international transport corridors (ITC) [6];
   - Development of the Rostov-Shakhinsk conurbation, Volgodonsk agglomeration and border areas of the Rostov region in the framework of the "Donbass" Euroregion;
   - Improvement of the sustainability of the region settlement system;
   - Decrease in the differentiation of socio-economic development of urban areas and municipalities.
4. Increasing the level and quality of life:
   - Increase in the capitalization of human resources;
   - Labor market balance achievement in the region, including the modernization of the system of vocational education in accordance with the needs of the labor market;
   - Improvement of the demographic situation;
   - Ensuring the growth of consumption and improving the social sphere infrastructure security above the national average;
   - Ensuring environmental protection and ecological safety, comprehensive solution of environmental problems associated with the neutralization of the effects of anthropogenic activities and experiments on the nature[4].
Methodology:

To obtain the basic characteristics of urban planning formations, there was used the methodology of calculating the so-called "agglomerative coefficient" of a network of urban settlements. This "U" coefficient represents the ratio of the density of urban settlements within the designated "N" areas of 10,000 square km (by applying to the region territory coordinate grid of 100x100 km) to the average for the given area value of the shortest distance between the nearest neighboring settlements "L". There were recorded 6 full and 10 partial squares, in which there were revealed the above mentioned types and forms of settlement, characterized by different rates of agglomerative coefficient.

Rostov monocentric agglomeration (U = 2.2) is being developed within the influence zone (radius of 50-60 km) of the historically established on the basis of trade and transport, industrial and administrative and cultural center - the city of Rostov-on-Don, which is an organizing core of the regional system of the Lower Don settlement (radius of 300-400 km), and the whole North Caucasus economic region (radius of 800-1000 km), as a part of the agglomeration of 6 cities (Rostov-on-Don, Taganrog, Novocherkassk, Bataiysk, Aksai and Azov), in the territory of 170 thousand hectares with a population of about 2.0 million people.

The East Donbass conurbation (U = 1.6), which urban development basis is mining industry, is being formed on the territory of the coal basin. It consists of 7 cities (Shakhlyt, Novoshakhhtinsk, KrasnySulin, Kamensk-Shakhinskii, Gukovo, Donetsk and Belaya Kalitva), 9 urban settlements in the territory of more than 350 thousand hectares with a population of about 700 thousand people.

Volgodonsk interconnected group of settlements is the "counterbalance" of the regional settlements system center (U = 0.8), is being formed since the beginning of the 70-ies on the basis of Tsimlyansk hydroelectric power station and industrial complexes of heavy engineering. It consists of the cities (Volgodonsk, Tsimlyansk), 2 urban settlements in the territory of 90 thousand hectares with a population of 250 thousand people.

Fine-focal resettlement (U = 0.3) and a rare uniform network of settlements, which is characteristic for the rest of the neighboring suburbanized territory of the Rostov region with some small and medium-sized cities of the agro-industrial type. Here there are located 7 cities, including Millerovo, on the space, occupying more than 80% throughout the region with a population of about 1.4 million people. Development of major transport and communication arteries reflects the economic connection between the structural zones and determines the general direction of the star-shape structure of the regional settlement system, which is being formed relatively to the eccentrically located Rostov-on-Don, the transport and planning axis from which determine the radial directions of development: in Donbas and further to Millerovo, Volgodonsk, Sal'sk, the North Caucasus, and to the coasts of the Azov and Black Seas.

Isochronogram of the 1-2-3-4-hour accessibility on the radial transport directions relative to the center, structural and regional planning organization of the settlements system reaches in maximum 60-120-180-240 km, respectively, and between the radial directions in minimum 30-60-90-120 km with minimal time spent on highways – 60 km/h.

On this basis, to assess the placement of the settlements according to the transport accessibility of the regional center, there are distinguished four zones:

- Zone up to 100 km, including Rostov agglomeration and its external area (1.5 hours of availability);
- Zone of 100-200 km, including the East Donbass conurbation, Constantinoisk, Semikaransk and other settlements (1.5-2.5 hour availability);
- Zone of 200-300 km, including Volgodonsk group Millerovo, Morozovsk, Sal'sk, and Proletarsk (2.5-4 hour availability);
- Zone of 300 km or more, located within the boundaries of the region, but beyond the margin of setting optimal connection with the city center, where there are no urban settlements; in its extreme points it reaches six hours of availability of the regional center.

The influence zone of Rostov-on-Don as the center of the settlement system includes about 2,300 rural settlements, making it virtually impossible to establish direct-round ties of the city with the villages. Under these conditions, at the functional (industrial, agricultural and recreational) zoning of the region territory, there is a need to identify the intermediate support cities – centers of the settlement system, mainly on the basis of small and medium-sized cities.

Most small and medium-sized cities located in these areas, due to underdeveloped transport infrastructure and limited socio-economic and socio-cultural potential of the area have little influence zone in 15 km and do not satisfy to the right degree the needs of the rural population.

Conclusion:

The new model of territorial planning of the Rostov region involves a complex territorial and economic approach taking into account the social priority.

The basis of the spatial planning of the Rostov region is proposed to put the formation and development of the population settlement skeleton (PDS), its territorial-spatial grid including the main directions of transport
connections of the international, federal and regional level, as well as the main directions of engineering infrastructure.

Meanwhile, within the population settlement skeleton it is proposed to create **structure-forming units** (SFU) at the intercrosing of the main axes and their **cities-centers** for the priority investment and innovation development, in order to improve the quality of life and provide employment for the labor resources of the population in the zone of optimal transport and time accessibility to the surrounding territories.

On the basis of the proposed solutions, there is possible the optimization of the structure of administrative-territorial management of the region entities, supposing the association of municipalities and districts in the district system of settlement (districts) and the development of their cities-centers as the main "**points of growth**".

Under the condition of the Rostov region, the introduction of a new model and the current understanding of spatial development require an integrated approach to the analysis of territorial distribution and the qualitative characteristics of all types of resources, including qualification and intellectual level of the labor force. The main driving forces towards a model of development is the changing technology associated with technological changes in the structure, changes in the regional division of labor, in the spread of education and the improvement of social and transport infrastructures.
The new model of the spatial development of urban systems also implies freedom and diversification in the development of settlement systems, which in turn causes an intensive development process of suburbanization in turn associated with the activation of urban development areas adjacent to the largest and large cities in the region [7].

Summary:
In the first place in the urban planning development strategy of the Rostov region there should be placed the theme of strengthening the existing system of settlement by forming intraregional settlement skeleton, linking the tangentially directed by the high-speed roads major 9 centers of the group settlement systems of the area—the cities of Rostov-on-Don, Shakhty, Kamensk-Shakhtinsky, Millerovo, Morozovsk, Volgodonsk, Sal’sk, as well as Veshenskaya and Remontnoye villages.

It is proposed to distinguish 9 district settlement systems with the cities and large settlements, being the centers of the structure-forming units within the planning skeleton of the territory at the intercrossing of the main functional-planning axes, which gives a possibility for the uniform cultural services throughout the territory of RD.

The characteristic and feature of the present critical period in the Russian urban planning is the change in the type of urbanization, transformation of its sources, driving forces with the full transformation of the nature of social and resource base of urban planning development. Therefore, it is advisable an integrated territorial and sectorial approach, taking into account the social priority. An important feature of this period is the increasing mobility of labor and intellectual resources [8].

Transformation of the network of settlements in the Rostov region territory on such a basis can provide economic, social, environmental and architectural-planning (urban development) effect of their sustainable development within the contemporary conditions.

Based on the regional economic development strategy, the current state of its economic complex, the existing system of resettlement and global tendency in urban development, the planning organization in the Rostov region extends the concept of the evolutionary transformation of urban planning systems of the area on the basis of sustainable territory development principles.

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