Case Study Report

Green urban frameworks in Russian cities: history, methodology and perspectives. Kazan case study.

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Abstract

Russia inherited the focus on extensive growth from the USSR, where the emphasis in planning was placed on new industrial capacities. The construction of new urban housing is the main priority in Russia now. The Green Urban Agenda has been implemented for a long time through the efforts of activists and remained outside the attention of the authorities. Official climate policy is mainly aimed at working with businesses and controlling carbon emissions; national projects are hardly synchronized with each other in matters of protecting natural resources.

There is an explosive interest in the creation of blue-green urban frameworks now. A local green deal begins with the planning of recreation facilities and is based on the active position of citizens opposing the development of natural areas. At the same time, there is no federal law that regulates urban green-blue networks. Green frame planning issues are practically not disclosed in the requirements for general plan elaboration.

For Kazan, a city on the Volga River 1000 kilometres to the east of Moscow, such a global task has become a logical continuation of already implemented projects for the arrangement of recreational, public and natural areas. Over the past 10 years, Kazan, interacting with activists and environmentalists and planning professionals, has successfully implemented projects from small lakes improvement to the coastal strategies.

It is necessary now to create a new mechanism for the formation of a continuous urban-ecological framework, the main task of which will be to synchronize all urban projects - from the repair of underground communications to the construction of new social and commercial objects. And also to give the highest level of priority to this urban mechanism over the existing city planning documents.

Keywords

Water-green city framework, climate change, health, new approaches, green planning

1. Urban green planning in Russia: the retrospective

Modern Russia inherited the focus on extensive growth from the USSR, which, in turn, continued the development trends of Tsarist Russia in the 19th century. In the USSR, the emphasis in planning was placed on new industrial capacities followed by housing and transportation networks construction.

The system or norms and requirements (so called Construction Norms and Rules - SNiP) was established in late 60-s when the mass housing program started. Norms for greenery protection were separately applied to “microrayons” (living unit in the soviet city), recreation facilities or industrial zones.

The approach to parks and boulevards differed from sanitary-protective plantings. Parks were supposed to occupy at least 70% of the total area of green spaces in cities. At the same time, the standard share of

green spaces in a residential area varied from 7 to 21 m^2 per one citizen, depending on the size or geographic location and climate of the city.

Protective greenery was established around industrial facilities - the so-called sanitary protection zones (SPZ): housing or commercial construction were practically forbidden within SPZ. At least half of the SPZ was subject to tree planting. SPZ performed several functions - they reduced the impact of harmful emissions, but also made strategically important facilities invisible from the air and difficult to access from the ground. The SPZ buffer could be up to 2 kilometers wide - it is not surprising that in some cities these zones are becoming the basis of modern water-green networks.

Green areas were perceived as purely functional, exploited by various departments of the city administration. A comprehensive view of urban green frames began to appear in theoretical works in the 70-80-s, but it was never implemented in the USSR. The “norm-based” development lasted until the mid-1990-s, when priorities in city development were dramatically changed. The industrial construction of the socialist era was replaced by massive housing and commercial development.

General plans of modern Russian cities are aimed primarily at the development of outskirts and suburban territories, which contributes to the rapid urban sprawl. Construction of new urban housing under the national project “Housing and Urban Environment” is one of priorities for the government on the state level. It claims for one billion square meters of housing to be built by 2030. The recommended share of city green areas was reduced to 6 m^2 per person now. These territories comprise any greenery, including urban forests, with the exception of SPZ.

In fact, greening norms have not been respected in the process of urban development in recent years. Krasnodar, a city in the south of Russia, one of the few in the country growing due to external migration, shows us an example of immense housing development. The city is rapidly expanding its area, absorbing the surrounding agricultural areas. Neither parks nor neighborhood greening have been envisaged in the territories of new construction over the past 10 years. The case of Krasnodar reflects the general problem: the disruption of the connectivity between urban water-green spaces and natural environment, the insufficient reference to the value of ecosystems and the lack of a comprehensive approach in the contemporary city planning processes in Russia.

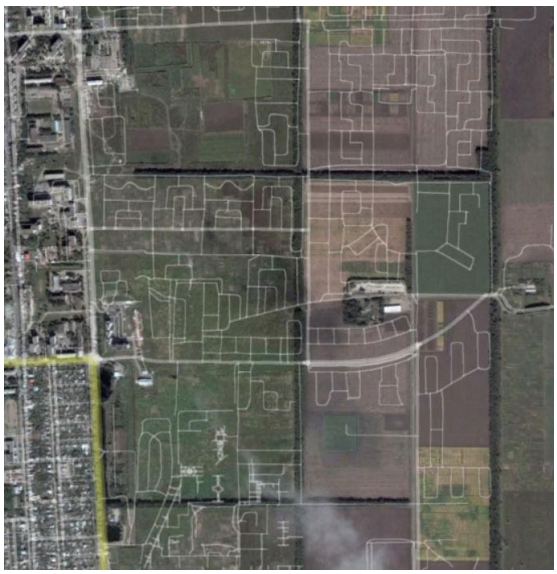

Figure 1,2 Left: north-east outskirts of Krasnodar, 2001. Right: New housing development, 2019 Image © Google Earth

2. Green urban landscapes and climate challenges: looking for new solutions

Forests in Russia burned in Yakutia, Siberia, Karelia, Irkutsk, Nizhny Novgorod and Samara regions, Krasnodar, Primorsky region's and Crimean cities faced floods, the threat of landslides was declared in the Ulyanovsk this year. The country was hit by all cataclysms that were previously observed only from afar.

At the same time instruments of a green economy were introduced rapidly. Official climate policy in Russia is mainly focused on business and the financial sector now, as well as controlling carbon emissions and handling solid municipal waste. National projects aimed at the development of the country, such as "Ecology" or "Affordable and Comfortable Housing" are not synchronized enough with each other: the preservation of natural landscapes comes into conflict with the task of increasing the residential real estate construction. Mega-events like Universiades, Olympic Games, international forums etc. also play a significant role in fulfilling tasks of these national priorities. New residential quarters, exhibition centers and stadiums often appear instead of natural areas being preserved previously for years.

While sustainable urban ecological systems have not been created in Russian cities yet, the existing facilities are no longer able to cope with climate challenges. Green areas often lose their protected status, formal compliance with standards and norms without focusing on the ecosystem itself comes to the fore.

Two reasons may be considered: first, the desynchronization of legislation on the state/regional level or/and interdepartmental contradictions in development programs and regulations. Second, planning green areas often lack scientific basis: ecologists, hydrologists, meteorologists and other specialists are rarely involved.

At the same time, Russian cities still preserve, in contrast to many European countries, large fields of natural landscapes and a network of city-wide and local recreational areas. It seems that this is enough and the problem is not as acute as experts believe.

Water bodies and suburban forests usually belong to different municipalities or administrative regions, which complicates governance of water-green network. Some Russian cities and agglomerations start using approaches based on the principles of bioregionalism. The choice of measures for preservation or spatial development is determined rather by natural then administrative boundaries. City of St. Petersburg and the Leningrad Region signed an agreement to jointly manage forest on the cross board of the two regions. The Yauza Park that spread for 35 kilometers along the Yauza river, which flows through the territories of Moscow and the Moscow Region gives us another example of interregional partnership. The Mayor of Moscow established a regional owned enterprise "Yauza park" to manage a territory with many different stakeholders.

The Green Urban Deal has been implemented for a long time through the efforts of activists and private experts and remained outside the official Agenda. It was Aleksandr Vodyanik - the adviser of the mayor of Krasnodar, a member of the expert council of the Russian Ministry of Construction who played the leading role in collecting successful examples and methods, knowledge exchange and involving local officials into the Green Urban Agenda.

He said that his mission was "To carry out constructive interaction with the plant world to solve the problems of human development. Aleksandr was that person who began to unite and form a community of experts from different regions and cities engaged in the science and practice of creating water-green urban frameworks in Russian cities". Aleksandr passed away in March, 2021.

Consider the Ecological Council of Yekaterinburg as a successful example of the interdisciplinary approach to the water-green framework implementation on a local level. This institution was created under the city administration, each of the experts conducted research and contributed their competencies to the work

of the council. As a result, the council gave a conclusion on any urban ecological project: to implement, to change or to cancel it. Despite that all the members worked on a voluntary basis, the conclusions of the Council had weight for the political decisions and city governance.

The problem of climate change has risen to the federal level. In March, Deputy Prime Minister of the Government of Russia Viktoria Abramchenko said “Subjects of the Russian Federation, all without exception, all 85 regions should prepare plans for adaptation to climate change”. At the same time, there is no federal law in Russia that regulates urban green-blue networks.

Most of these issues still remain for the solution on the regional or municipal level. Regions and cities operate according to local roadmaps, based on internal strategic and local capabilities. On the one hand, effective measures and decisions are promptly taken. On the other hand, the lack of environmental priorities leads to violations of legislation, environmental problems and disasters.

3. French-Russian Project for sustainable and green cities

Alexander Vodyanik’s efforts were not in vain. A new comprehensive approach to nature in cities appeared. It was announced by Kazan, Yekaterinburg and Krasnodar: regional and local leaders were identified, working groups were formed, and further actions in the field of water-green framework development were planned.

A series of seminars “Water-green urban framework as a basis for creating sustainable and smart cities” was initiated to develop a roadmap for the implementation of the green agenda. The event was supported by the Ministry of Construction, Housing and Utilities of the Russian Federation and the Ministry of Ecological Transition of the French Republic, the Russian-French forum "Trianon Dialogue", Association of Landscape Architects of Russia (ALAROS). Five cities involved: Nice and Bordeaux from France and Yekaterinburg, Kazan, Krasnodar from the Russian part.

As a result of the first stage of the French-Russian Project, the experts developed a draft framework program that reflects the strategic, legal, methodological, political, organizational and applied aspects of the formation of water-green urban frameworks in Russia.

4. Water-Green City Framework strategy for Kazan

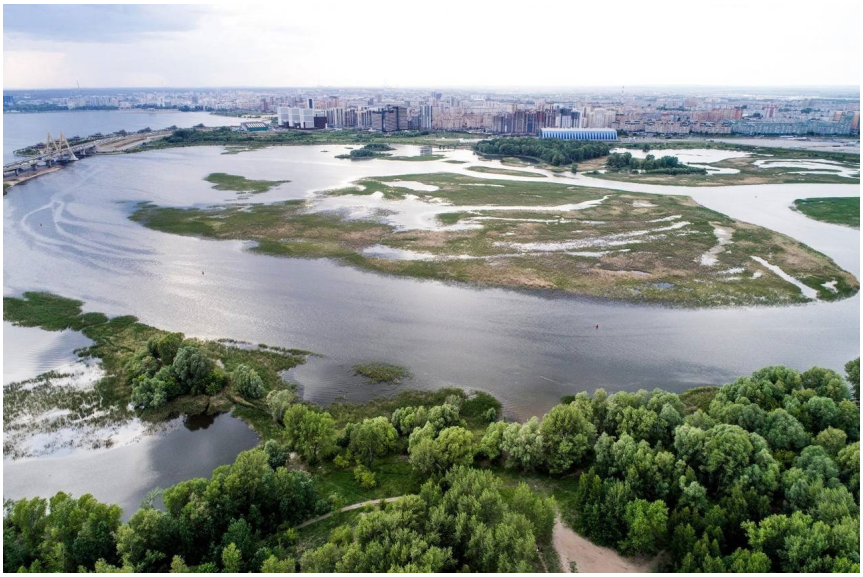

Figure 3. «Russian-German Switzerland». 256 hectares of protected natural area in the center of the city.

One of the pilot cities of the Project is Kazan, the capital of the Republic of Tatarstan, a city on the banks of the Volga River 1000 km east of Moscow. The global idea of the Urban Water-Green City Framework strategy is a continuation of the projects of local public parks and recreation areas implemented over the past 10 years. The Water-Green Framework development project is carried out by the "Institute for City Development" of Kazan under the leadership of the City's Deputy Senior Architect D. Tolovenkova.

Since 2011, in Kazan, with the support of the President of the Republic of Tatarstan Minnikhanov and the mayor of Kazan Metshin, 99 parks and squares have been landscaped according local and regional programs under the umbrella program "Development of public spaces of the Republic of Tatarstan". 29 public spaces were included in the Federal program "Formation of a comfortable urban environment".

Figure 4. Lake Kaban embankment. Downtown. Phyto-treatment tanks.

Figure 5. Pedestrian boulevard along Fuchik street in a residential area.

To create a harmonious environment within the city, a general urban scheme of all natural areas' typologies that relied on recreational load was developed. Design methodology based on natural-ecological and cultural-landscape aspects and maintenance principles were established. Plant nursery of Red Book plants was founded to restore ecological territories.

They understand in Kazan that the effects of climate change will not happen quickly. There will be a gradual change in weather conditions. Flooding and overheating of the city will occur more often. Mortality due to changes in intra city microclimatic factors will increase. As a result, City administration will incur high costs for the maintenance and repair of green spaces and urban infrastructure.

At the same time Kazan is developing a plan for ecological and therapeutic areas in the city center in conjunction with the neighboring districts and new tourist zones focused on environmental friendliness and health. Firstly in Russia Kazan has adopted a thematic map of a natural and recreational complex as part of the city's general plan in February 2020. This map has equal validity with the transportation and functional zoning ones. It aims to protect the existing recreational areas in the city and allows creation of new protected natural areas. Like other Russian cities over the past 100 years, Kazan has lost a lot of green resources in favor of the growth of the city's housing, industrial and commercial construction and transportation networks. It happens not only due to developers' ambitions or private low density construction, but mostly as a consequence of absence of a unified strategy for public areas, green spaces and transportation facilities. This situation is typical for most Russian cities.

Multidisciplinary expert teams were organized in the city to work on natural areas development. Expert teams are responsible for site selection, public discussions, project design and implementation and long term maintenance. Special attention is paid on working with the city's activists. New cases and methods of collaboration between experts, authorities and city residents are being developed as a result of collaboration.

A few months ago the city adopted new Rules for land use and development, which, among other things, regulate the relationship between existing natural areas and recreation zones. The development of planning projects and documents is based now on a water-green framework strategy.

Over the past 10 years, Kazan has been developing new approaches to the preservation and natural areas redevelopment. With the support of the Mayor of Kazan, interacting with activists and ecologists, several lake rescue projects have been implemented, development has been halted that threaten environmental sustainability, and large city parks have been created.

Figure 6. Strategy for the Kazanka River, Urban Water-Green City Framework strategy, The concept of historical center sustainable development.

On behalf of the President of Tatarstan two strategic concepts have been developed: "Strategy for the Kazanka River" and "The concept of historical center sustainable development". Both concepts focus on preserving natural areas and landscape-relief components for the further harmonious city development. Guided by these two concepts adopted, the republic and the city leaders made significant decisions and canceled large construction projects on the coastal territory. New specially protected areas were created on these sites previously appointed for development.

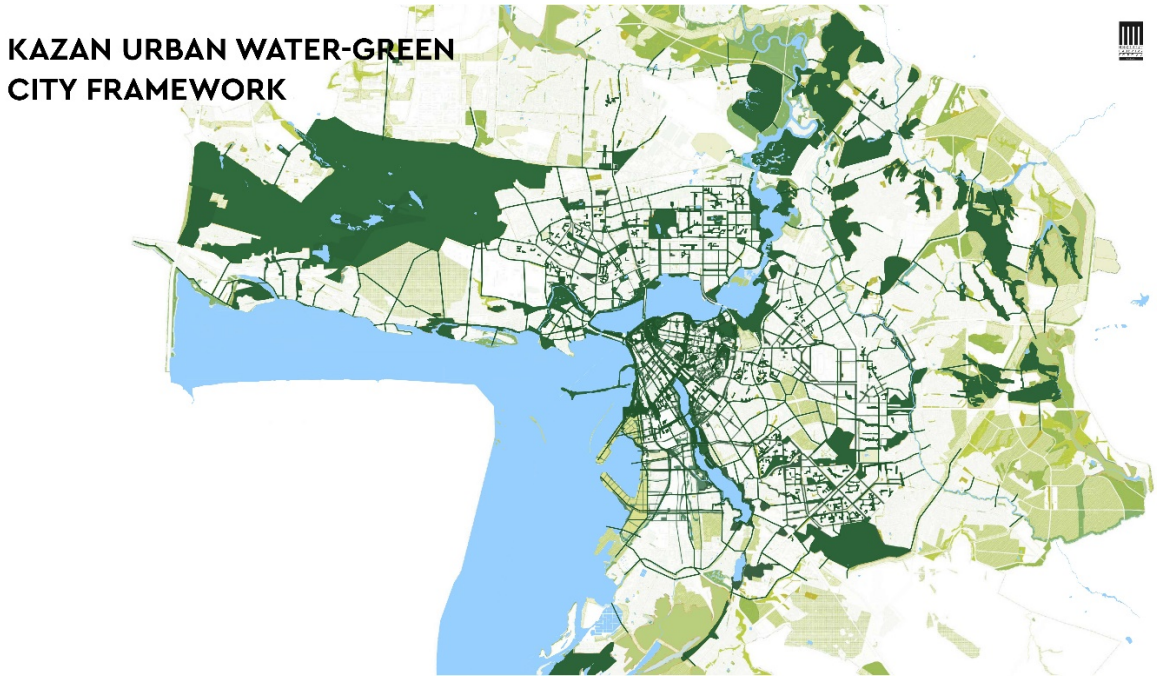

Figure 7. Kazan Urban Water-Green City Framework

Nowadays the city of Kazan faces a new challenge - to create new methods and rules for the formation of a continuous water-green frame. The main aim is to synchronize various urban projects and branches, and finally to give the highest level of priority to this mechanism focused on the citizens' health.

Russian cities are at the point of decision making now. Should we continue to build vast “sleeping areas” or should we create a harmonious urban environment, which is provided not only by the pedestrian connections, but also by recreation areas, where nature will preserve the physical and psychological health of urban residents. This is the city were citizens may not only work to realize their creative potential, but also spend their time with children, taking care of future generations and aged people.

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