

Improvement of the Mechanisms of Samara-Tolyatti Agglomeration as a Factor for the Development of Samara Region's Economy

The Environmental Aspect

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Abstract— The article considers the state regional environmental policy as a mechanism for the development of Samara- Tolyatti agglomeration. Based on the analysis of the implementation of the environmental action plan for the direction of development of Samara- Tolyatti agglomeration the authors make conclusion about the degree of the results' importance for the conservation of Samara region's natural resources. At the same time, the authors indicate that the environmental aspect incorporated in the planning documents for the development of the agglomeration is not of an agglomerative nature.

Keywords—*Samara; agglomeration; urban territory; ecological aspect; regional development*

I. INTRODUCTION

In the modern world, the main forms of modern population settlement are agglomerations – territorially united compact groups of settlements that have developed production, cultural and recreational ties. The development of agglomerations is a natural process of unification of the periphery around large cities and natural manifestation of the process of urbanization [1, 2, 3].

This process, entailing dramatic change in the demographic, socio-economic moreover, cultural character, includes a pronounced environmental aspect; the rapid growth of cities, increasing the number of populations, the development of production and technologies leads to environmental problems, among of which growing importance acquire pollution of water, land and air.

In modern conditions, the development of agglomerations is a subject to careful regulation by the state and regional authorities to extract the greatest profits from this process, both economic and socio-cultural ones [4, 5]. Ecological

direction is one of the most important areas to regulate the development of modern agglomerations, which brings together the efforts and finances of state and municipal levels and gain significant synergy effect for the conservation of natural resources [6]. Ease of Use

II. MATERIALS AND METHODS

Samara-Tolyatti agglomeration is one of the largest urban agglomerations of the Russian Federation – in terms of population (about 2.7 million inhabitants; 85.5% of Samara region population), it ranks third in the country after Moscow and St. Petersburg agglomerations. Agglomeration is located in the central and western parts of Samara region mainly on the left bank of the Volga in the territory of 8 urban districts and 9 municipal districts [7]. In the modern structure of the Samara- Tolyatti agglomeration, it is customary to distinguish two main cores – Samara and Tolyatti, around which agglomeration develops, and one more – Syzran.

The process of forming an agglomeration in the Samara region entered an active phase at the beginning of the 20th century, when enterprises and settlements with regular labor and sociocultural connections began to develop around Samara. The development of the towns of the Samara region was influenced by the processes of urbanization and industrialization, which led to the rapid growth of both Samara and other towns of the region and the increase in their population.

In the second half of the 20th century, the region's settlement structure was supplemented by the location of a large city of Togliatti between Samara and Syzran. Its rapid growth and the corresponding development of transport infrastructure led to the transition from a monocentric to a polycentric structure of the agglomeration and the

intensification of connections between towns over a space of more than 150 km (from Syzran to Samara).

The result of the development of the Samara-Togliatti agglomeration by the beginning of the 21st century was the formation of three large centers with high economic and demographic potential (Samara, Togliatti and Syzran), forming satellite zones around themselves (Novokuybyshevsk, Kinel, Chapaevsk, Zhigulevsk, Oktyabrsk) and the periphery (municipal areas). At the same time, the planning structure of the agglomeration still includes a large number of rural settlements of various degrees of population density.

The most important feature of the territorial structure of Samara-Tolyatti agglomeration is high concentration of the population in the core of agglomeration and the presence of significant “non-urbanized” territories between cities; a significant extent of agglomeration along the Volga, the presence in the geographic center specially protected natural territories of federal significance (Zhiguli National Conservation Area and Samarskaya Luka National Park) and specially protected territories of regional significance [8].

Since 2013, in Samara region, agglomeration processes have been accepted into the system of state socio-economic regulation development; Samara-Tolyatti agglomeration is included in the number of pilot regions to develop mechanisms for managing Russian agglomerations [9]. To conduct a comprehensive regional policy, a coordination council has been created, which includes the heads of 17 municipalities, the heads of regional specialized ministries, representatives of the administration of the Governor of Samara region and the Samara Provincial Duma.

To improve the efficiency of the management of the development of the Samara-Tolyatti agglomeration in 2014, the interagency working groups and advisory councils were created at the Coordination Council: an advisory council in the field of urban planning of the territory, an interdepartmental working group on land policy in the agglomeration territory, and working groups on environmental policy and the development of proposals for the renovation of industrial sites and the removal of industrial facilities from the central parts of urban districts within the agglomeration.

Currently, the development of Samara-Tolyatti agglomeration is carried out in accordance with the action plan (“road map”) for the development of Samara-Tolyatti agglomeration, which includes 7 directions: 1. Development of the agglomeration management system; 2. Strategic and territorial planning of agglomeration development; regulation of land relations on its territory; 3. Development of the transport and logistics complex; 4. Development of production infrastructure; 5. Tourism development; 6. Coordination of social policy and development of social sectors; 7. Environmental policy.

The work done at the regional level to implement the regional environmental policy on the territory of Samara-Tolyatti agglomeration allows analyzing its results and determines the effectiveness of the agglomeration policy for the development of ecology. The basis for the analysis is the reporting documents of the ministers of the Samara region

responsible for the implementation of environmental policy in the framework of the action plan for the development of Samara-Tolyatti agglomeration..

III. RESULTS

At the first, planning and organizational, stage of development of the Samara-Togliatti agglomeration, considerable work was done in the region to develop strategic documents for the development of the agglomeration, which was of great practical importance, since earlier the study of agglomerations had mainly town-territorial orientation. In connection with the design of the state agglomeration policy, the task arose of developing a conceptual and strategic basis for the development of Russian agglomerations.

Two documents were developed in the Samara Region that determine the strategic prospects for the development of the Samara-Togliatti agglomeration.

The first one – the draft concept of the program “Socio-economic development of the Samara-Togliatti agglomeration for 2014-2018” – was developed by OOO “Strategic Partners Group” under the instructions of the Government of the Samara region as part of the preparation of the draft Strategy for improving the competitiveness of the Samara region until 2030 based on long-term development strategies of Samara and Togliatti. A long-term (until 2035) vision of the development of the agglomeration was formed in the project, its key growth points and development directions were identified. The project was based on the development of two main cores of the agglomeration, the formation of linking infrastructure and the development of production infrastructure, the design of an effective management system and coordination of the development of the agglomeration. A feature of this project is the reflection of the position, first of all, of the government at the federal and regional levels, aimed at improving the competitiveness of the Samara region.

Another project document that considers the prospects for the development of the agglomeration, “The development strategy of the Samara-Togliatti agglomeration,” was developed by a group of international and Russian experts on territorial and city planning on the initiative of representatives of the region’s business community. The “Development Strategy of the Samara-Togliatti Agglomeration” was distinguished by its special attention to those aspects that were hardly reflected in the regional level project: environment, landscape, urban structure. The strategy included the creation of an ecologically oriented industrial center of the agglomeration, landscape improvement of the agglomeration territory, the development of a population mobility system based on ecological transport, a change in the urban space system based on compact resettlement and compacted development of core cities and a system of green corridors between them.

The differences in approaches to the development targets for the Samara-Togliatti agglomeration in these projects were determined, first of all, by the difference between the goals of the initiators of their development: the Government of the Samara region, implementing a national policy, focused more on the organizational and managerial aspect, and urban

planning specialists and residents of the region – on infrastructure and environmental issues.

At the same time, it should be emphasized that when developing an action plan (“road map”) for the development of the Samara-Togliatti agglomeration, aspects that the authors of the second project paid special attention to, were included in it because of the importance for the region of timely solving transport, industrial and environmental issues.

The environmental policy on the territory of Samara-Tolyatti agglomeration consists of 8 main areas: 1. Development of proposals to take into account the provisions of the Concept of agglomeration development in the Concept of environmental development of Samara region. 2. Development and measures implementation to preserve Samarskaya Luka National Park and the functioning of Zhiguli National Conservation Area named after I.I. Sprygin. 3. Ensuring the inclusion of measures to restore forests and forest belts, including urban forests, in the municipalities of metropolitan area in the existing and developing of Samara region and municipal programs of government programs. 4. Preservation and development of specially protected natural territories of regional significance on the territory of the agglomeration, strengthening state control over compliance with the special protection regime. 5. Measures implementation to eliminate the accumulated environmental damage in the municipalities of the agglomeration and the renovation of these territories for further involvement in economic turnover. 6. Coordination of activities and measures implementation for the collection, utilization and processing of production and consumption waste in the STA. 7. Measures implementation to use and protect water bodies on the territory of the agglomeration. 8. Improving the environmental monitoring system on the territory of the agglomeration.

Over the five years of the implementation of the action plan for the development of the Samara Togliatti agglomeration in the environmental sphere, the following results have been achieved.

Reforestation works were carried out on the territory of Samarskaya Luka National Park (planting of forest crops on an area of 1.0 ha, addition of forest crops on an area of 4.8 ha; the total number of planted seedlings of common pine and silver currant – 12 thousand pieces). Regular surveys were conducted to obtain data on the number of the main hunting animals and to study the formation and topical distribution of flora and fauna – fieldwork. On the territory of the Zhiguli National Conservation Area, the scientists performed the work to preserve the natural complexes in a natural state, research and environmental education, the development of environmental monitoring.

In the framework of the state program in Samara region “Development of the forestry of Samara region for 2014-2022 years” reforestation measures were carried out in Tolyatti city and Stavropol (along the federal motorway M5).

The share of the area of specially protected natural areas at present in the total area of the region is 5.4%; for this indicator, Samara region takes the 6th place in the Volga Federal district among 14 constituent entities of the Russian

Federation. For the period 2014-2017, 9 specially protected natural territories have been created. In the framework of the state program of Samara region “Environmental protection of Samara region”, a set of measures is carried out annually aimed at preserving biodiversity. The Red Book of the Samara region is being maintained (currently 560 species of plants and animals are included in it; of these, 286 species of plants, lichens and fungi; 274 species of animals), measures are being implemented “Adjustment of design and estimate documentation and works on liquidation and reclamation of arrays of existing waste disposal facilities”, including reconstruction of elements for municipalities of Samara region.

In 2013-2014 design estimation documentation has been developed for the reclamation of large man-made facilities for unauthorized placement of solid household waste – the Uzyukov landfill (Tolyatti city), the unauthorized landfill for municipal solid waste in the Samarskaya Luka national park (Zhigulevsk city), and the unauthorized landfill household solid waste in village Alekseevka (Alekseevskiy district). The State program of Samara region “Elimination of accumulated environmental damage and reclamation of former industrial sites on the territory of the Samara region for 2014 -2019” provides for restoration measures on the territory of former JSC “Srednevolzhskiy chemical plant” (Chapaevsk) and the disposal of waste located on the territory of former JSC “Fosfor”.

In March 2017, a schedule (“road map”) for the transition of Samara region to a new waste management system was developed and approved. The standards for the accumulation of municipal solid waste in the territory of specially protected natural territories of the region were approved; a regional operator for solid waste management has been identified.

Within the framework of the state program of Samara region “Development of the communal infrastructure and improvement of the waste management system in Samara region for 2014-2020, the event “Design and new construction of a landfill for the disposal of municipal solid waste near the city Tolyatti” will take place.

The clearance of three sections of small riverbeds of Chapaevka and Syzranka rivers with a total length of 12.7 km was completed. The boundaries of water protection zones and coastal protection zones of Samara, Sok, Kondurcha, Chapaevka, Tatyanka, Krivusha, Syzranka, Krymsa, Kurumoch, Chagra rivers with a total length of 1394 km (including two banks of 2788 km) were determined. Well-maintained springs were in village Shilan, Malaya Kamenka of Krasnoyarsk region. The priority project “Preservation and prevention of pollution of the Volga in the Samara region” was developed, which includes the construction of treatment facilities of JSC “Avtovaz”, the construction of sewage treatment facilities of PJSC “Kuibyshevazot”, the reduction of the flow of polluted wastewater into the water bodies of the Volga basin from PLC “SIBUR Tolyatti” .

On the territory of the agglomeration, the state system of monitoring the environment is functioning; elements of the territorial observation network have been created.

In the framework of the state program “Environmental protection of the Samara region for 2014 -2020” there is financing of stationary observation points for pollution of atmospheric air near Pokhvistnevo and village Bezenchuk.

IV. DISCUSSION

A set of measures for the conservation of natural resources on the territory of Samara-Tolyatti agglomeration solve the major environmental problems facing the region. The greatest achievements should be in the development of nature conservation and conservation areas, as well as the elimination of environmental damage and the restoration of territories.

At the same time, according to the analysis of regional environmental policy, we cannot say that the indicated direction of the action plan for the development of Samara-Tolyatti agglomeration belonged exclusively to its territory— all the above results were achieved through the implementation of specific environmental areas, which cover the entire territory of Samara region. Thus, the actual environmental policy in the framework of the Samara-Tolyatti agglomeration is not carried out. Not agglomeration is the locomotive of development of Samara region, but on the contrary, the region plans and implements state policy on the territories of the agglomeration, without separating it into geographic and economic whole. This is mainly due to the fact that the Coordination council for the development of agglomeration includes the same governing bodies and responsible persons who represent the regional level of government. The system of their planning and implementation of plans is aimed exclusively at the entire territory of the region; the reporting on achieved results to the federal center has the same focus.

Thus, the environmental measures implemented over the past five years are clearly of regional importance; their composition and orientation are of value, first, for the Samara region. Based on the above, we can conclude that Samara-Tolyatti agglomeration in the system of planning and implementation of environmental policy cannot be considered as a mechanism for developing the economic potential of Samara region.

At the same time, the environmental situation in the region as a whole and the agglomeration in particular cannot be called favorable. Particularly acute at the moment are the problems of air pollution on the territory of individual industrialized regions of two agglomeration centers - Samara and Tolyatti, as well as in two satellite towns - Otradnoye and, in particular, Novokuybyshevsk. There is also an acute problem of water pollution in the agglomeration territory - again, in large industrial centers: its sources originate, on the one hand, in the discharge by enterprises of insufficiently treated wastewater in the region’s rivers, and on the other hand, in the peculiarities of the Volga River flowing through the territory of the region, which is currently a reservoir. In cities — and this is, above all, Samara and Tolyatti — there is no adequate system of urban ecological frameworks. Environmental problems at the level of regional governments are resolved, as a whole, not strategically, but quickly — in

response to urgent problems, taking into account the availability of financial resources.

In these conditions — when the environmental problems of the territories of the Samara-Togliatti agglomeration, on the one hand, and municipalities of the Samara region, on the other hand, are closely intertwined, — the question arises of how to solve them taking into account precisely the potential for agglomeration development.

The limited financial capabilities of municipalities often do not correspond to the scale of environmental problems, the solution of which is carried out mainly within the framework of regional or federal programs and at the expense of regional or federal budgets. Awareness of the impossibility of changing the environmental situation on our own often creates a feeling of passivity on the part of the local public and a situation of irresponsibility on the part of municipal authorities. The solution of environmental problems, due to the peculiarities of the legal regulation of the studied field and the high economic cost, is a priori transferred to the regional and federal levels of government.

In this situation, the revitalization of agglomeration processes with the participation of all potential actors — both at the management level and at the public level — seems to be one of the most important mechanisms for increasing the level of the ecological state of the region. Taking into account both the problems and the capabilities of individual agglomeration territories in improving their own environmental well-being, open dialogue and expression of positions when forming comprehensive programs open to public opinion and pressure, can activate the resolution of pressing environmental problems of the region that cannot be resolved taking into account the existing regional management system.

In the current management system of the Samara-Togliatti agglomeration, this will require expanding the powers of interdepartmental working groups and enhancing the participation of municipalities included in the agglomeration in a single body, coordinating the development of the agglomeration, the activities and powers of which require expansion and clarification, taking into account both urgent practical problems and modern theoretical developments in the field of agglomeration development.

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