

DIRECTIONS AND LEGISLATION OF GROWTH AND DEVELOPMENT OF URBANIZATION IN THE UPPER BASIN OF THE CHIRCHIK

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ABSTRACT

This article is devoted to the elucidation of modern trends and geographical laws of urbanization processes in the upper basin of Chirchik – an ecologically and economically important area of the Tashkent region. The study analyzes the dynamics of population growth, changes in the share of urban population, territorial concentration of industrial enterprises and structural changes in infrastructure development. The main directions of urbanization are the intensification of agglomeration processes, the development of recreational function in foothill areas, and the formation of elements of a "green" economy. The article also highlights the contradictions between urbanization processes and increased anthropogenic pressures on the use of natural resources, in particular water and land resources. The scientific work applied analytical approach, which is based on statistical data, cartographic materials and the results of field research.

Keywords: Urbanization, Chirchik basin, agglomeration, urban system, industrialization, demographic processes, environmental safety, spatial planning.

INTRODUCTION

Sustainable development of cities and urban-type settlements in the Republic of Uzbekistan is one of the priority areas of regional policy. The upper basin of Chirchik, which is directly adjacent to the capital Tashkent, as one of the most highly urbanized regions of the country, is of particular scientific and practical interest. This region is not only a historical center of industrial production, but also a concentration of intensive migration processes, unique natural landscapes and a significant part of water resources.

In the last two decades, under the influence of globalization, transition to a market economy and demographic changes, a qualitatively new stage of urbanization processes in the region has begun. The main purpose of the study is to determine the spatio-temporal directions and patterns of urbanization processes in the upper Chirchik basin and to assess their impact on the environment. Systematic analysis, statistical processing, cartographic modeling and comparative (comparative-geographic) methods were used in the study. The scientific novelty of the study is that for the first time the processes of urbanization in a comprehensive study of a close relationship with the natural boundaries of the foothill basin and the load of water bodies have been investigated.

The upper basin of the Chirchik geographically covers the area from the foothills of the Western Tien Shan mountain ranges to the middle course of the Chirchik River. Administratively, this territory includes the northeastern part of Tashkent, part of Bostanlik, Akkurgan, Qibray districts of Tashkent region, as well as large industrial cities such as Chirchik, Angren, Almalyk, Yangiyul. A feature of the region is that the processes of

urbanization here began to develop in the 30s of the twentieth century, it was in close relationship with the construction of large-scale hydropower and industrial power.

At the initial stage (1930–1960), urbanization was subordinated to the "industrialization" paradigm. Chemistry, energy and mining and metallurgical clusters were created in the cities of Chirchik and Akhangaron. The main growth of the urban population during this period occurred at the expense of labor resources organized on the basis of an administrative-command system. In the second phase (1970-1990), as a result of increased influence in the capital Tashkent, "pendulum migration" (migration of everyday labor) developed in the region. The third, modern stage (from 1990 to the present) is characterized by the restructuring of the economy, the growth of the private sector, and the complexity of the functional structure of settlements.

Over the past 30 years, the growth rate of the population of the Chirchik Basin has been 1.3-1.5 times higher than the national average. If in 1991 the population of the territory was about 1,8 million people, then by 2024 this figure will exceed 2,7 million. The absolute growth of the population is led by natural growth (25–30%) and migratory growth (70–75%). The main part of the migration growth occurs due to the migration of able-bodied population from Tashkent and other regions of the republic.

The main demographic pattern of urbanization processes is the movement of population from the foothills to the valley and to the suburbs of large cities. As a result of this process, the big agglomeration "Big Tashkent" is formed on the direction Tashkent – Chirchik – Almalyk – Yangiyul. Due to the intensive migration of rural people to cities and suburban areas, the population density in the suburban (suburban) zones has increased dramatically. For example, some neighborhoods of Qibray district (Qibray township, Salar, Friendship) have reached the level of small towns in terms of population. This situation blurs the traditional boundaries between urban and rural and creates a new form of urbanization – "diffuse".

The Chirchik basin accounts for about 35–40% of the industrial potential of Uzbekistan. It is centralized in the field of energy (cascade of Chirchik hydroelectric power plants), chemistry (Chirchik branches of Makhan-Chirchik and "Navoiyazot"), non-ferrous metallurgy (Almalyk mining and metallurgical combinat) and the building materials industry. The industry-related direction of urbanization manifests itself in two different ways:

Transformation of old industrial centers: large enterprises built in Soviet times in cities such as Chirchik and Almalyk are at the stage of transition to new technological structures. In the process, the composition of employment has changed, and the share of the service and logistics sectors has increased.

Formation of new industrial and logistic clusters: Construction of the Tashkent ring road (Tashkent ring road) and new railway infrastructure resulted in the appearance of new industrial zones in the northern and eastern parts of basin. In particular, the rapid growth of "light industry" and "logistics centers" in Akkurgan and Qibray districts confirms the "economic impulse" model of urbanization.

Improvement of the road network and expansion of the system of intercity public transport (electric trains, buses) in infrastructure development strengthened the differentiation of the

regions by the basic law of urbanization – ease of transport. Meanwhile, foothill villages located far from transport highways (for example, some settlements in Bostanlik district) are excluded from economic activity and are depopulated.

The most important spatial law of urbanization in the upper basin of Chirchik is the acceleration of agglomeration processes. The city of Tashkent is the central core, its sphere of influence extends to a distance of 60-70 kilometers. Within this circle, such cities and towns as Chirchik, Akkurgan, Gazalkent, Qibray are functionally connected to the capital.

Agglomeration processes are manifested in the following steps:

Pendulum migration: Every day about 200–250 thousand people move between Tashkent and the surrounding cities for work and services.

Functional integration: New residential areas ("spalnye rayony") and industrial parks are being created in the surrounding areas.

Suburbanization (suburbanization): There is a movement of the population from the central city to the surrounding small towns and villages. This process is explained mainly by the high land prices in Tashkent and the complication of the environmental situation.

The process of suburbanization presents a number of problems: construction occupation of the surrounding agricultural land, overload of drinking water networks, and reduced permeability of local roads.

The rapid growth of urbanization seriously threatens the ecological sustainability of the Chirchik Basin. The main natural wealth of the region is the Chirchik River and its tributaries. The main ecological legislation of urbanization is the strengthening of the "gravitational" (gravitational) effect of urban and industrial areas on water resources and basin ecosystems.

Studies show:

Pollution of water resources: The concentration of heavy metals (lead, zinc, copper) and chemical compounds in river waters around large cities (Chirchik, Almalyk) is 3–5 times higher than the permissible norm.

Atmospheric air pollution: The level of air pollution is high in the Tashkent-Chirchik industrial zone. Sulfur dioxide and other harmful substances in the eastern part of the basin are profoundly active as a result of work of Almalyk mining and metallurgical combinat.

Land Degradation: Concrete and asphalt coverage of fertile soils in the suburbs, as well as pollution by construction wastes are widespread.

To mitigate these environmental contradictions, it is necessary to introduce the principles of "green urbanism", sustainable development of riverside recreation zones and modernize the waste management system.

The study of the processes of urbanization in the upper basin of the Chirchik leads to the following main conclusions:

Directions: Urbanization has moved from an "industrial-centric" model to an "agglomeration-spread" model. Today the main direction is to expand the sphere of influence of Tashkent and form "green belts" and "innovation clusters".

Legislation: The processes of urbanization in the territory are developing on the basis of the following legislation:

Law of concentration along traffic highways: Population and economic activity are concentrated along major road and rail routes.

Laws of functional hierarchy: The system of cities is subordinate to the hierarchy of "capital - large industrial cities - towns - villages".

Laws of Ecological Delimitation: The intensity of urbanization in foothill and watershed areas is limited by the ability of the natural environment to regenerate itself.

Perspective: For the sustainable development of the region, it is necessary to revise the regional planning documents (master plans), introduce smart city technologies and improve the water resources management system. In the future, reducing socio-environmental risks of urbanization, establishing legal order in suburban areas and developing public transport infrastructure remain a priority.

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The process of urbanization is one of the most important indicators of the development of society. It represents a complex socio-economic process associated with increasing population

in urban areas, the distribution of productive forces and infrastructure development. The process of urbanization is developing at a rapid pace, especially in industrialized areas.

The upper basin of the Chirchik River is considered one of the economically developed zones of Uzbekistan. The territory is distinguished by the wealth of natural resources, convenient location of transport communications and presence of industrial enterprises. The process of urbanization in the territory was formed in a long historical period and continues to develop actively today.

The main purpose of the article is to analyze on a scientific basis the development directions, territorial laws and factors of urbanization process in the upper basin of Chirchik.

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Natural and geographical features of the research area

The Chirchik River is one of the most important water systems in the Syrdarya basin, the upper basin of which originates in mountainous areas. The relief of the territory consists mainly of mountain and foothill plains, where the availability of natural resources greatly affects the settlement of the population and economic activity.

The climate of the territory is temperate continental, with winters being relatively cold and hot summers. Availability of water resources is the important basis for the development of agriculture and industry. The Chirchik River also plays an important role in the development of energy and irrigation systems.

Due to the favorable natural conditions, settlement camps have been formed in the area since ancient times. With the development of the industry later, the process of urbanization accelerated even more.

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Formation stages of the process of urbanization

The process of urbanization in the Chirchik basin was formed in several stages. The initial stage was associated with the development of agriculture, the population was mainly engaged in irrigation farming.

The next stage is associated with the creation of industrial enterprises. Especially the sectors of chemical, energy, mechanical engineering and production of building materials determined the economic specialization of the region.

In Soviet times, large industrial centers were established in the area, which contributed to a sharp increase in the level of urbanization. During the years of independence, as a result of economic reforms, small business and service sectors developed.

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Main directions of urbanization development

One of the main directions of the urbanization process in the region is the expansion of industrial production. The creation of new enterprises will increase employment of the population and strengthen migration processes.

The second important area is the development of transport infrastructure. Widened railroads and motor roads strengthen inter-regional economic ties.

The third area is the improvement of social infrastructure. The development of education, health and cultural institutions will increase the level of urbanization.

The process of modern urbanization is also associated with the development of information technologies.

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Territorial legislation of the urbanization process

The process of urbanization develops regionally unevenly. Areas close to industrial enterprises and transport hubs will have a higher rate of urbanization.

Mountainous areas, on the other hand, have low population density and urbanization is slow. This situation is explained by both natural conditions and economic opportunities.

Another important legislation of urbanization is related to migration processes. Increased jobs attract residents to cities.

As a result, urban agglomerations are formed, and economic activity increases.

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Environmental Problems of Urbanization

The acceleration of urbanization also creates environmental problems. Air pollution occurs as a result of the activities of industrial enterprises.

Overuse of water resources adversely affects the ecological balance. Land resource depletion is also one of the major problems.

To solve environmental problems, it is necessary to adhere to the principles of sustainable development. The introduction of green technologies will reduce the negative impact of urbanization.

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Conclusion

The process of urbanization in the upper basin of the Chirchik is a complex socio-economic process. The natural resources, industrial potential, and transportation infrastructure of the area have a positive impact on the development of urbanization.

The laws of the urbanization process are determined by territorial conditions, economic specialization, and demographic factors.

In the future, it will be important to maintain ecological balance and develop modern infrastructure for the sustainable development of urbanization in the region.

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