

**SOCIAL AND ECOLOGICAL SPACE OF THE URBAN ENVIRONMENT OF  
UZBEKISTAN: HISTORY AND APPROACHES TO RESEARCH**

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**Abstract:** The article examines the formation and evolution of approaches to the study of the socio-ecological space of the urban environment, with an emphasis on the realities and urban processes taking place in Uzbekistan. The development of scientific thought is analyzed - from classical concepts of interaction between society and nature to modern studies highlighting the impact of urbanization on the environmental and social well-being of the population. Particular attention is paid to the Soviet legacy in urban development policy, as well as modern initiatives aimed at creating a sustainable and ecologically balanced urban environment in Uzbekistan. The challenges and prospects of eco-social transformation in the context of growing urbanization, climate change and social demands of the population are reflected.

**Keywords:** socio-ecological space, urbanization in Uzbekistan, urban environment, environmental sociology, sustainable environment, environmental policy.

**Introduction.** In the context of global changes associated with accelerated urbanization, population growth and environmental challenges, the issue of creating a balanced and sustainable urban environment is of particular importance. For Uzbekistan, which is in the phase of active infrastructural transformations, urban modernization and implementation of state programs to improve the quality of life, the topic of the socio-ecological space of the city goes beyond academic interest and becomes an important part of the state strategy.

Against the backdrop of climate change, reduction of green areas, deterioration of air quality and shortage of water resources, the integration of environmental principles into urban planning, development of urban infrastructure taking into account the interests of the population and the formation of an inclusive, safe and sustainable urban environment are becoming especially relevant. The features of urbanization in Uzbekistan - rapid growth of cities, displacement of rural population, unbalanced distribution of environmental load - require a comprehensive analysis of the urban environment from the point of view of both sociology and ecology. standpoint of environmental sociology and social ecology, identify current challenges and offer guidelines for sustainable urban development.

In addition, in Uzbekistan, socio-ecological issues acquire a cultural and historical dimension, since environmental sustainability is closely linked to the preservation of cultural heritage, traditional architecture, social ties and patterns of interaction in mahallas (neighborhood communities). All this necessitates rethinking the scientific discourse on the urban environment as a space where nature, man, society and culture interact.

The purpose of this article is a comprehensive analysis of the history and stages of studying the socio-ecological space of the urban environment in the global and post-Soviet scientific context,

as well as the adaptation of these theoretical approaches to the conditions of Uzbekistan. The author seeks to determine the features of the formation, functioning and transformation of the urban environment of the republic from the standpoint of environmental sociology and social ecology, identify current challenges and offer guidelines for sustainable urban development.

**Methods.** The study of the socio-ecological space of the urban environment requires a comprehensive and interdisciplinary approach that combines the provisions of social ecology, urban studies, environmental sociology, philosophy of space and cultural anthropology. The development of this problematic in scientific knowledge occurred gradually - from generalized philosophical ideas about the relationship between nature and society to modern studies of urbanized territories as complex adaptive systems. To achieve the research goals, the following methods are used: The study of the socio-ecological space of the urban environment requires a comprehensive and interdisciplinary approach that combines the provisions of social ecology, urban studies, environmental sociology, philosophy of space and cultural anthropology. The development of this problematic in scientific knowledge occurred gradually - from generalized philosophical ideas about the relationship between nature and society to modern studies of urbanized territories as complex adaptive systems. To achieve the research goals, the following methods are used:

Comparative historical analysis — to identify the stages of development of socio-ecological thinking and urban practices in Uzbekistan;

Case study (case analysis) — to study specific cities (Tashkent, Samarkand, Nukus, Navoi) in terms of environmental sustainability and social adaptability;

Hermeneutic approach — to interpret the symbolic meanings of the urban environment in culture and traditions;

Cartographic analysis and geosociology — to analyze the distribution of green areas, building density, access to resources;

Qualitative sociological methods (interviews, observation, questionnaires) — to identify the perception of the urban environment by residents, their environmental culture and practices.

### **Results**

The study of environmental issues rightfully occupies one of the central places in the modern scientific agenda. The study of the ecology of the urban environment is one of the most significant tasks of modern science, especially considering that today more than half of the world's population lives in cities. Within the framework of this problematic, special attention is paid to the study of the socio-ecological space as an area of intersection of the interests of nature, man and society. The idea of the interaction of nature and society has its roots in the works of the classics of sociological thought - such as G. Spencer, E. Durkheim, K. Marx, M. Weber - who emphasized the importance of the natural environment in the formation of social life. However, the targeted study of socio-ecological problems began within the framework of the theoretical direction known as environmentalism (ecologism), focusing on the sustainable interaction of man with the environment.

The study of socio-ecological space received its most significant development within the framework of the Chicago sociological school, whose representatives - R. Park, E. Burgess, R. Mackenzie, L. Wirth and others - developed conceptual models of the urban environment. R. Park, one of the founders of the socio-ecological approach, empirically proved the influence of the environment on the structure and functions of the urban community. He and his colleagues

considered the settlement of the population, the boundaries of districts and zoning as a consequence of social processes - dominance, competition, cooperation. E. Burgess proposed a concentric model of the city, including zones from the central business district to the suburbs, which made it possible to explain the dynamics of urban development and the ecological distribution of the population. L. Wirth, in turn, focused on the transformative influence of urbanization on the daily life of a person, emphasizing that the city is becoming not just a place of residence, but also a regulating center of social and cultural activity.

Later, the ideas of the Chicago school were developed in social ecology, a direction represented by the works of A. Hawley, O. Duncan, and L. Schnore. They substantiated the concept of an ecological community and ecological complex as a system of interrelations between the population, environment, technology, and organization. In particular, Hawley considered culture as a system of regulatory mechanisms that ensure the stability of the population in environmental conditions, and Duncan and Schnore studied the dependence of social processes on environmental changes at the level of regions and communities.

Soviet sociology also made a significant contribution to the development of the socio-ecological approach. Scientists such as L. B. Kogan, O. I. Shkaratan, O. N. Yanitsky and others studied the processes of urbanization, uneven population distribution and the environmental consequences of urban growth. They pointed out that the development of large industrial centers often occurred at the expense of exploitation of natural resources and social infrastructure, which in the long term led to environmental degradation and social tensions. These studies are especially relevant in the context of Uzbekistan, where urbanization is accompanied by a sharp increase in the population in Tashkent and other large cities, an increase in the density of development and the loss of green areas.

The modern understanding of the urban environment involves considering not only physical, but also social, psychological and cultural parameters. The socio-ecological space, therefore, acts as a complex system in which the natural (natural) and artificial (technogenic) components interact. The natural environment includes climate, relief, flora and fauna; the technogenic environment includes architecture, transport, utilities and information flows. Researchers such as V.Z. Makarov, S.P. Myakinnikov, T. Dridze emphasize that the city is the result of historically formed socio-natural integration, where natural and social factors are inseparable.

The cities of Uzbekistan, like the megalopolises of other countries, face a number of environmental and social challenges: deteriorating air quality, loss of green spaces, traffic jams, social fragmentation. At the same time, features of cultural organization, such as the mahalla - a traditional form of local community - can play an important role in environmental adaptation and sustainability. Involving the population in the processes of greening, waste management, and landscaping helps to develop a sense of responsibility for the common space.

In the context of increasing globalization and climate change, the study of the socio-ecological space is of particular importance for the sustainable development of cities. In Uzbekistan, this area of scientific research should take into account the historical and cultural context, traditional forms of self-organization, climate and architectural features. Only a systematic approach based on interdisciplinary knowledge will allow us to develop effective strategies for the preservation and development of a harmonious urban environment that is resistant to environmental, demographic and social changes.

The study of the relationship between society and the environment in Uzbekistan has its own specifics, conditioned by both the Soviet legacy and national traditions of organizing the urban environment. Already in the Soviet period (1950-1980s), the works of Uzbek geographers, demographers, architects and sociologists raised issues of rational use of natural resources, water resources, zoning of cities and preservation of green areas (for example, projects for greening Tashkent after the earthquake of 1966). An important contribution was made by scientists of the Academy of Sciences of Uzbekistan, who studied the anthropogenic impact on arid ecosystems. Particular attention was paid to the environmental consequences of agricultural policy, including irrigation projects, which became especially relevant after the aggravation of the Aral crisis.

With the beginning of independence (after 1991), the research focus shifted to sustainable development, eco-social consequences of urbanization and issues of transformation of traditional way of life. The first attempts at a comprehensive assessment of cities as social-ecological systems, including both natural and cultural components, appeared. The National University of Uzbekistan, the Tashkent Institute of Architecture and Civil Engineering and the Republican Center for Ecology made a significant contribution to the development of the topic.

In the context of rapid urbanization, Uzbekistan faces a number of serious challenges affecting both the natural and social components of the urban environment. Rapid population growth in large cities such as Tashkent, Samarkand and Fergana is accompanied by uncontrolled development, which leads to the compaction of residential areas, a reduction in green spaces and an overload of transport, utilities and social infrastructure. Such dynamics upset the ecological balance and reduce the quality of the urban environment. One of the most acute aspects remains the reduction of green areas: mass felling of trees during construction, as well as insufficient attention to systematic landscaping contribute to the deterioration of the microclimate and an increase in temperature loads in the summer. This, in turn, leads to a decrease in air quality and increased discomfort for city residents.

The environmental situation is aggravated by the lack of sustainable transport policy. The growing number of cars, poor public transport and infrastructure for environmentally friendly modes of transport, such as bicycle paths and pedestrian zones, contribute to the growth of air pollution, noise levels and affect public health. Against this background, the phenomenon of environmental inequality is intensifying, when access to a favorable ecological environment becomes a privilege for a limited number of people. While a number of city districts retain parks, squares and high-quality housing conditions, other, less affluent districts face pollution, a lack of green areas and poor public services.

An additional challenge is the gap between the traditional way of life characteristic of the mahalla culture and modern forms of urban environment organization. In new residential areas built according to standard designs, the sense of local community and social control previously inherent in mahallas is lost. This leads to a decrease in the level of environmental responsibility and alienation between residents, which negatively affects the daily practice of handling space and resources.

To overcome the described challenges and increase the sustainability of the urban environment of Uzbekistan, a systemic and comprehensive approach is needed that combines institutional, educational, spatial and cultural measures. First of all, it is necessary to develop and implement a national concept of the "Green City" adapted to the natural, climatic, cultural and historical features of the republic. Such a concept should provide for limiting the density of development,



preserving and restoring green areas, as well as using eco-design principles in the design of new microdistricts. At the same time, it is necessary to strengthen the legal framework regulating urban development activities and expand the powers of local khokimiyats in the field of environmental planning, providing them with resources and tools to monitor the state of the urban environment.

A significant area is the development of environmental education and awareness. The formation of a sustainable environmental culture should begin at the school and university level, include courses on environmental citizenship, as well as practical initiatives - greening campaigns, competitions of improvement projects. Public initiatives aimed at restoring cultural traditions of collective responsibility for space are especially important in the context of the mahalla way of life, where joint efforts play a key role in creating a comfortable environment.

Sustainable urban planning should include not only architectural and transport changes, but also the integration of intelligent monitoring systems. Installing air quality sensors, using digital platforms to analyze environmental data and provide feedback to residents can improve the transparency and efficiency of environmental risk management. Developing public and bicycle transport, as well as eliminating car priority in historical and central areas of the city, will create conditions for improving the quality of urban life.

Particular attention should be paid to the preservation and development of cultural forms of interaction with space. The restoration of the mahalla as a form of socio-spatial unity can become not only a factor in sustainable development, but also the basis for the formation of environmentally responsible behavior. Involvement of residents in improvement processes, joint decision-making on territorial development, participation in cultural and environmental initiatives form a sense of involvement and attachment to the place, and therefore sustainability and care for the urban environment.

**Conclusions.** The socio-ecological space of the urban environment of Uzbekistan is a complex and multi-layered phenomenon formed at the intersection of natural, cultural, historical, economic and social factors. Its study is especially relevant in the context of accelerated urbanization, transformation of the post-Soviet space and rapid development of digital and infrastructure technologies. In cities where a significant part of the population is concentrated, key issues of sustainable development, environmental safety and quality of life of citizens are resolved. That is why the socio-ecological perspective is becoming an integral part of urban environment research, contributing to a deeper understanding of the relationship between man, society and the environment.

Historical analysis shows that in Uzbekistan, the traditions of harmonious coexistence between man and nature had a solid foundation rooted in Eastern culture, Islamic ethics and customs of sustainable water use and agriculture. However, in the 20th century, especially in the Soviet period, under the influence of industrialization and centralization of governance, environmental principles were largely replaced by technocratic approaches. This led to the disruption of natural balances, degradation of the urban environment and a decrease in the quality of life. Against the backdrop of modern climate challenges and a shortage of natural resources, issues of reconstruction of a sustainable socio-ecological space are acquiring strategic importance.

In recent years, positive changes have been observed in Uzbekistan in the direction of greening urban policy, including the development of "green" zones, the introduction of sustainable transport systems, digital services and citizen participation in solving environmental issues.

However, these processes require scientific support, an interdisciplinary approach and consideration of both global trends and local cultural characteristics. Of particular importance is the need to form a new environmental culture based on the principles of responsibility, educated consumption and interaction with the environment.

Thus, the study of the socio-ecological space of the urban environment in Uzbekistan not only allows us to rethink the historical paths of its formation, but also opens up opportunities for developing effective strategies for sustainable urban development. It is important to take into account the uniqueness of the local context and at the same time integrate advanced international experience. The future of the cities of Uzbekistan largely depends on how socially oriented, environmentally sustainable and culturally rooted the model of their further transformation will be.

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