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IMPORTANT ISSUES OF PRESERVING THE CITY ECOLOGY OF THE REPUBLIC OF UZBEKISTAN

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Abstract
This scientific article discusses the problems associated with the ecological infrastructure of modern cities and, based on the analysis, draws conclusions and recommendations for the organization, improvement and development of the ecological infrastructure of modern cities.

Keywords: urban infrastructure, city ecology, environmental requirements, biotic city, ecopolis, green city, environmental infrastructure, modern city rating, environmental performance, smart environment, environmental standards.

Introduction

Urbanization is a historical process of increasing the social, economic, political, spiritual and cultural role of cities in the life of society [3; 415], it has become an integral part of today's socio-political processes. In developed and developing countries, as well as in third world countries, people are moving towards cities. Today, even the most backward countries have at least one relatively well-developed center - the capital, to which millions of people, mostly young people, flock in search of comfortable living conditions, steady income, and, moreover, happiness and luck. This process did not bypass Uzbekistan. Currently, many of our citizens are thinking about moving to the city and conducting activities there.

In the work of our president Shavkat Mirziyoyev, we will continue our path of national development and raise it to a new level, on improving the ecological situation in cities, identifying possible dangers in advance, and studying the characteristics of their problems [1; 255] as well as D. Yormatova's Ecology and Environmental Protection [2; 123] and other literature cover the problems.

Methods such as analysis, synthesis, and comparison were used to cover the article.

It should be noted that in recent years, the expansion of the cities of our country, the increase in the migration of the population from the countryside to the city has led to

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the acceleration of the urbanization process and the emergence of a new concept "urboecology" in our language. This concept is derived from Latin urbs - settlement, ecologist - ecology, which means urban ecology. Urboecology studies not only the process of ecologically historical development of cities, but also the preservation of urban nature, the expansion of green areas, and the impact of the urban environment on human health and activity.

Currently, one of the main problems of the cities of our country is ecology and its negative consequences. In particular, it is true that clean water, waste transportation, epidemics, the problem of traffic density, excessive air pollution have become the main problems facing our cities. It should be noted that it cannot be denied that the provision of clean drinking water in cities has become a problem. Because news in this field is covered in social networks. So how does this problem occur and can it be fixed? What should be done for this? First of all, let's talk about the main problems. Today, there are cases of secretly connecting taps in the basements of multi-storey buildings to irrigate fields. This, in turn, causes insufficient pressure of drinking water to reach the next apartment building or the upper floor of that house. In this case, the neighbors are not blaming each other, but the water supply department and its technologies are outdated. Now we make a proposal to eliminate it. For this, in general, it is necessary to increase the culture of ecological and efficient use of drinking water. That is, we need to teach people to distinguish between drinking water and waste water, and to follow the rules when using it.

Now let's turn to the issue of determining the composition of clean drinking water in the city. How can you determine whether drinking water is clean? The way to determine the purity of water in the urban area is the presence of small living organisms in it. If there are no such living organisms, then its composition is highly chemicalized. If you see red, vertically swimming tubeworms in the water, you should definitely be careful. Not only can you drink this water, but you can't even bathe in it. Because it contains a lot of nitrogen, these worms feed on this chemical. Nitrogen is abundant in wastewater.

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1. Efficient use of water;
2. Drinking water is a source of life;
3. Wasting water is a careless view of life;
4. Water is the limited most necessary blessing; Experts noted that traffic problems are also increasing. At first glance, it seems that the transformation of a huge area into a single city should improve transport links. In fact, regular traffic jams and lack of public transport make it difficult to move around in big cities. It is no secret that especially in

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the big cities of our country, traffic jams and late arrivals of public transport cause some inconveniences. Several large bridges and roundabouts are being built in the city of Tashkent in recent years to improve traffic flow. But despite the progress of these works, traffic jams appeared on the city streets, because of this, at least 100 new cars are added to the city streets every day, and if we calculate, the number of these cars will reach 1000 cars in ten days. The amount of toxic gases released into the atmosphere from these machines led to the formation of "Smog" in the city of Tashkent.

In general, transports serve to make our life easier in some aspects, but sometimes they increase the number of its various social problems. And the smoke coming out of them creates a ground for air pollution. At the same time, it cannot be denied that the fumes emitted by the vehicles cause the city's air to warm up to a certain extent. In this case, they are like servants who continue the work of various gases released into the air by large factories. A question appears. What should be done in order to protect the city's ecology by preventing emissions from transport.

First of all, it is advisable to install a filter for smoke coming out of vehicles. Second, the transition to electric vehicles is beneficial. Thirdly, it is necessary to make it a tradition to hold a "car-free day" in cities one day a week. Fourthly, it will be necessary to promote citizens to use bicycles and to build bicycle lanes for this. It is good for health and ecology. Of course, allocating special bicycle lanes on the sides of the highway would be a contribution to the cleanliness of the city air. Because riding a bicycle on the sidewalk is dangerous for pedestrians, while riding on the highway is life-threatening.

In our opinion, it is enough to remember that the residents of Tashkent city could not breathe due to dust on October 17, 2022, and the authorities could not take any measures in this process. In this regard, the information provided by "Uzgidromet" substantiates the above opinions.

It is worth noting that "Uzgidromet" recommends the residents and visitors of Tashkent to follow the following due to dust and dust:

1. Try not to leave the house as much as possible. 2. When on the street, it is necessary to wear a medical mask and change it every hour. 3. In case of shortness of breath, runny nose, wheezing, flu, red and itchy eyes, severe itching in the throat, cough, it is necessary to consult an allergist immediately. 4. It is recommended to rinse the nose and throat in a saline solution, keep the windows closed, spread wet towels in front of the windows

Such situations in Tashkent were repeated on November 4, and were reflected in the press pages and social networks. It can be said that similar processes were observed in other regions of the republic. According to experts, the unusual dust-sand fog observed in Tashkent on the evening of November 4 was caused by the rise of the very dry upper layer of the soil as a result of the strengthening of the wind [7; 2]. This means that environmental damage does not end there, but opens up other problems. For comparison, the state of pollination was announced on the social network and it was shown that Tashkent is in the first place.

Results

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As we know, air cleanliness in the city depends on the vegetation layer. Grasses catch dust rising from the ground, bushes catch exhaust gases from cars, and trees catch dust and gases from above. Trees with a large surface, such as maple, elm, chestnut, oak, etc., have a high ability to trap dust and carbon dioxide, so it gives good results to grow them. That's why our ancestors planted maple trees.

The sycamore not only provides shade, but cleans the air from dust, and its roots collect a lot of water in its body, creating a unique positive microclimate around it in the scorching heat. In addition, maples protect from the scorching heat typical of the climate of all the republics of Central Asia. It creates a unique microclimate in its shade. Raises a person's mood. Coniferous trees do not fully cope with this task. Of course, in order for the trees to absorb more dust, it is necessary to wash their leaves from time to time due to the lack of rain.

At present, in almost all residential areas of our cities and the country, not only beautification workers, but also in the courtyards pull out the grass that has grown on the ground, sweep the soil and sprinkle water. But since the day is hot in Uzbekistan, the ground dries up quickly and dust rises. And the grass catches this dust. Therefore, it is desirable to increase lawns in settlements. In recent years, "living fences" planted around the roads and multi-storey buildings, i.e. cutting down bushes, have been observed in our cities. This, in turn, increases the risk of respiratory diseases and allergies in children. Because bushes primarily protect short children from dust and smoke.

Large leaf trees, such as sycamores and cypresses, which trap harmful substances in the air, are cut down and replaced by coniferous ornamental trees, which cannot replace the ancient sycamores that clean the city's air.

The more parks, lawns and bushes there are in our cities, the more people will be happy with the greenness. It is also a place of worship.

It should be said that today the process of renewal and increase of green spaces is underway in our cities. Since many trees are planted in places where water, sewage, heat pipes of the city have passed, trees have to be removed to repair them. There is a master plan for the construction of the city, and today it is necessary not to plant perennial trees on such infrastructures. It should be said that today in our capital, Tashkent, each person has 49 square meters of green space. This is necessary to protect human health. Coniferous trees have a greater ability to hold dust, and they also create a unique microclimate. Therefore, it is advisable to plant conifers, as well as other ornamental trees, such as chestnut, in the city. As for "living fences", they are being replaced by aesthetically beautiful bushes that protect the city from noise and dust.

The decision of the Council of People's Deputies of the city of Tashkent dated 16.09.2022 "On approval of the master plan for greening of the city of Tashkent" was adopted.

The document approved the Master Plan for the greening of the city of Tashkent in 2023-2027, according to which it is envisaged to plant about 7 million seasonal flowers, no less than 75 thousand tree seedlings and bushes every year. In accordance with the master plan, the following tasks are defined: - until 2024, the level of greenness of the

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capital will reach 30%; - to the Department of Ecology and Environmental Protection and district hokims to install dust and gas trapping devices with an efficiency of not less than 95% in the stationary sources of atmospheric air pollution of enterprises belonging to categories I and II in terms of environmental impact. 'installation control upload; - taking measures for current repair and renewal of irrigation networks in the streets of city and district centers; - determination of measures to protect trees from harmful insects; - In 2022-2024, beautification of the shores of the canals passing through the city, strengthening of the banks of the canals, greening and establishment of parks. In recent years, in the field of urban development of the Republic of Uzbekistan, consistent work has been carried out in the field of environmental protection, effective and rational use of natural resources, improvement of sanitary, hygienic and ecological conditions.

One of the most important areas of public attention today is the modernization of the infrastructure of large cities, compliance with international requirements, improvement of the transport infrastructure, solving problems related to the environmental conditions of the transport infrastructure (waste gas, noise, electromagnetic and vibration). This, in turn, increases the demand for scientific and innovative innovations related to conducting theoretical and practical research in this field, introducing international requirements and norms, taking into account the experiences of advanced foreign countries. The change of urban ecology depends on people's natural and ecological thinking, their understanding of medical and social spheres, and their worldviews. Urban ecology develops measures to prevent the negative factors of the transport system, which are related to and directly affect the urban environment and the life and health of its inhabitants.

Deterioration of ecological and hygienic indicators in densely populated cities poses a great danger to city dwellers. Therefore, providing people with clean water, clean air, and prevention of epidemics such as noise and waste gas in densely populated large cities is important and is one of the urgent problems awaiting solution.

The purpose of the research is to study and analyze modern requirements and procedures related to ecological, sanitary-hygienic conditions and problems in the development of the infrastructure of new modern cities in the republic. It is to create optimal solutions by comparing the current situation in this field with ISO standard requirements and the experiences of developed countries and existing infrastructure in foreign countries. As a result of the conducted researches and studies, development of proposals and recommendations regarding the development of ecological infrastructure of modern cities in the republic and provision of optimal ecological conditions.

The tasks of scientific research are as follows:

- analysis of scientific, practical works and researches on the development of ecological infrastructure of modern cities;
- to study the prospects of introducing modern requirements and procedures related to the problems of the ecological situation in the formation of the ecological infrastructure of the modern city;

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- analysis of international requirements and experiences of developed countries related to the standardization system in the formation of motor transport infrastructure in modern cities;
- is to prepare generalized conclusions and recommendations based on research results, international requirements in this field and the experiences of developed countries.

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- consists in preparing generalized conclusions and recommendations based on research results, international requirements in this field and the experiences of developed countries

The object of scientific research is systems of urban ecology, urban ecological infrastructure, problems of urban ecological infrastructure and methods related to their solution.

Based on the results of the research, the normative and technical documents of the development of ecological infrastructure of modern cities will be evaluated based on their optimal aspects, international requirements and the experiences of developed countries.

The main requirements for the environmental infrastructure of modern cities are the subject of scientific research. It is a base of standards related to environmental requirements of infrastructure of modern cities, environmental quality and safety indicators of infrastructure, transport, ecological and environmental protection system. Description of the methodology used in the research, the following methods were used in the process of this scientific research: Analytical method - study of relevant standard, technical and legal documents in the system of urban ecology. The method of comparative analysis is to determine the optimal solutions by comparing the data on the development system of ecological infrastructure of several existing cities. Literature review (analysis) on the topic of research The formation of urban ecology corresponds to the 20s of the 20th century. The following periodization of the development of this direction can be suggested:

1. 20-50s of the 20th century, establishing connections between social ecology and human ecology with regions, gathering ecological knowledge in urban planning,

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developing and implementing the concepts of regulating the relationship of human thinking between man and nature;

2. The introduction of the principles of systematic, ecological approaches in urban planning in the 60s of the 20th century. "Optimal city", "Biotechnical city", "City in nature" models were used in the design and construction;

3. Forming the main concepts and methodological approaches of urban ecology in the 70s and 80s of the XX century, developing models and putting them into practice: "City-group residential form", "Ecological city" (Ecopolis), "Scientific and industrial city" (technopolis).

4. In the new socio-economic and regulatory conditions of the 90s of the 20th century, deepening of ecological knowledge in the field of urban planning, formation of requirements for sustainable and non-ospheric development of residential areas and their systems. To strengthen the leading role of the socio-economic and ecological approach in the formation of the urban environment.

Thus, by the beginning of the 21st century, it can be said that the field of urban ecology was formed as a special direction of the science of urban planning, with its own methodology and research principles.

Several generalized approaches and concepts have been formed in urban ecology:

1. "The city as a system of self-organization";
2. "The city as an element of the developing biosphere";
3. "A city consisting of an architectural and natural subsystem" - a single complex-large urban landscape that develops over time;
4. "Dynamics of the urban landscape as a unity of its stability and variability";
5. "The city as an object of cultural ecology", "humanizing the homosphere".

At the beginning of the 80s of the last century, the Ecopolis program, proposed by a group of experts in ecology and biology, became popular. The concept of "Ecopolis" was presented by its authors (DNKavtardze, AABrudniy, VGAgavelov):

"Ecopolis" is a small city of the future, where the environmental parameters are set in controlled conditions, and the population is ready for constant changes in both lifestyle and nature. In Ecopolis, there is a permanent experiment in the interaction of nature and man.

At the same time, in the early 1980s, the concept of "Biotic city" developed by ANTetior was proposed. According to this concept, "Biotic city" is a place of residence where

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favorable conditions are created for the existence of all living things: flora, fauna and people.

Some models of urban systems that are convenient for solving urban-ecological problems are proposed. In one of them, urban elements are divided on the basis of "natural environment - artificial environment".

Development of ecological infrastructure of modern cities and provision of ecological condition, analysis of the ecological situation in big cities today, it is necessary to determine the development trend and perspective of this field. Every step forward in this field is important in improving and optimizing the lifestyle of the population, finding solutions to problems in this field, and developing the country's economy. Among the growing problems of infrastructure management in cities, especially social, economic, infrastructural, environmental, transport and other problems are becoming more acute, the disproportion between the urban base and social infrastructure is increasing. Lack of housing for the population, economic-social and utility system placements are observed in any city today. Nowadays, the convenience and modernity of living in cities, the prosperity of cities in the future is one of the urgent problems. Our goal is to make the living environment more comfortable and comfortable, as well as to optimize it.

The level of well-being of the population is an important indicator of the final effect of environmental factors on people.

Almost 50% of the population of our country lives in large cities, therefore solving the issue of optimal formation of the living environment in these cities is considered one of the most important tasks.

The comfort of living in a modern city is determined by the sum of the following indicators: Natural environment: geological and hydrogeological structure and terrain; microclimate; landscape; soil layer; Ecological environment: level of soil pollution; level of air pollution; level of water pollution; Social environment: population density and population structure; provision of service sector facilities; availability of transport;

Level of beautification of urban environment: level of beautification elements; transport infrastructure; landscaping and landscaping. We note the main trends describing the development of urban planning theory during the 20th century. It is convenient to divide all concepts into two main categories: urban and de-urban. The urbanistic approach is manifested in the fact that the environmental problems of the modern city are to be solved by concentrating the population, while in the deurbanistic approach,

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this is done by distributing people to the natural environment. The methods developed by urban ecology are particularly relevant. At the end of the 20th century, the world community realized the threat to the Planet's ecosystem caused by widespread urban settlements. In the 21st century, it is possible to try to create a new type of settlement - a city integrated into natural ecosystems - an ecologically clean city.

Urban ecology is a special branch of the science of urban planning, the subject of which is the study of the interaction of urban structures with the natural environment and the development of proposals for its optimization.

The main goal of architectural ecology is to search, research and apply the principles of creating an architectural and landscape environment in which nature and human interests are combined. Regional urban ecology is a special branch of science, the subject of which is the study of the laws of interaction of the highest order urban planning systems (systems of settlements, urban agglomerations and higher) with the natural environment. Among the most important tasks of environmentalization of the living environment, as mentioned above, the problem of achieving an ecological balance between the city and nature stands out. Urban development is one of the main factors of the active influence of man on the natural environment. It is fair to consider the city as a part of the general ecosystem of the region, the country. The types of interactions in the "city-nature" system depend on the size of the city and its population.

According to some data, for the highest level of ecological balance, with effective measures for waste water treatment, waste, etc., a population density of no more than 60-1 people per 50 km2 and no more than 20-30% can be achieved with non-p forest cover. Based on the generalization of the European experience in creating sustainable settlements, the criteria for optimal planning of the environment and the construction of buildings of ecological settlements for hot climate conditions were formed:

1. Each element of the environment has its own meaning and its needs should be carefully evaluated in terms of improving the quality of life. This applies to all representatives of the animal world, plants, people, all elements of the human environment, natural and artificial.

2. It is proposed to accept all elements of the human environment, not from the point of view of their compliance with certain standards and concepts, but to accept them as they are and to work with them to improve the general environmental situation;

3. Every environmental problem contains a solution. If there are disadvantages, then they must have advantages. The more problems there are, the more opportunities there are to change the situation. For example, China's "crisis" character has both concepts: danger and opportunity

Conclusion

In conclusion, it can be said that preservation and development of urban ecology is the responsibility of not only official organizations, but also of every citizen. Given that it is based on trees and shrubs, it is up to biologists to determine which types of trees are most suitable for the city. We need to change the way of thinking of our citizens, to make

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them feel a sense of belonging to the emerging problems, to explain that the city and its possibilities are not limitless in their lives, and to teach them to use God's blessings effectively. Because the change of thinking is important in looking at all problems with realistic eyes and preventing them.

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ЦЕНТРАЛЬНЫХ РАЙОНОВ НЕЧЕРНОЗЕМНОЙ ЗОНЫ (Doctoral dissertation, Московская ордена Ленина и ордена Трудового Красного Знамени сельскохозяйственная академия имени КА Тимирязева).

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