



## IMPROVING THE EFFICIENCY OF PROVIDING GREEN INFRASTRUCTURE SERVICES IN UZBEKISTAN Y AND FOREIGN EXPERIENCE

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### KEY WORDS

*Green infrastructure, green economy, services, project, literacy of the population, Waste management, foreign tourists, tourist opportunities, green tourism of tourists, region, green energy.*

### ABSTRACT

*This article examines the effectiveness of the provision of green infrastructure services, including projects and services aimed at creating and managing environmentally friendly and sustainable infrastructure. Such services, as a rule, are green infrastructure services with a scientific analysis of the issues of effective use of the tourist opportunities of the regions in the formation.*

### Introduction

Green infrastructure services are essential for a sustainable future and play an important role in combating climate change and ensuring environmental sustainability. Decree of the President of the Republic of Uzbekistan dated September 11, 2023 No. PF-158 "on strategy" Uzbekistan-2030", Decree of the President of the Republic of Uzbekistan dated December 2, 2022 No. pp-436 "On measures to improve the effectiveness of reforms aimed at the transition of the Republic of Uzbekistan to a "green" economy by 2030" - the implementation of tasks defined by the decree of the Government of the Republic of Uzbekistan and other regulatory legal acts will contribute to improving literacy of the population in the field of green tourism in Uzbekistan.

<sup>1</sup>In order to increase the literacy of the population in the field of green infrastructure services in Uzbekistan, develop green infrastructure in the country, increase employment in this area and, at the same time, preserve natural diversity, that is, biobalance, prevent climate change, green infrastructure services include projects and services aimed at creating and managing environmental and sustainable infrastructure. Such services usually cover the following areas:

1. Landscape design and landscaping: contributes to improving air quality and reducing greenhouse gas emissions by creating green spaces, gardens and woodlands in urban and rural areas.

<sup>1</sup> O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi. "Barqaror rivojlanish strategiyasi va yashil iqtisodiyotga o'tish." Ekologiya qo'mitasi nashri, 2023.

2. Energy efficient infrastructure: energy production using solar panels, wind generators and other renewable energy sources. Energy-saving technologies are also used in lighting and heating systems.

3. Water conservation systems: conservation of natural resources through services such as efficient water use, wastewater recycling, rainwater harvesting.

4. Environmental monitoring: the introduction of modern technologies for monitoring and managing air quality, water pollution, soil and other environmental indicators. Development of public transport systems: reduction of emissions from transport through electric transport, bicycle paths and special pedestrian zones.

6. Waste management and recycling: recycling systems, composting of organic waste, introduction of technologies aimed at reducing industrial waste.

### **LITERATURE ANALYSIS AND METHODS**

<sup>2</sup>Green infrastructure services at the turn include many successful projects to ensure environmental sustainability and develop infrastructure without harming the environment. Below we will get acquainted with some foreign experiments:

1. Singapore-Green City Project: In Singapore, Green infrastructure is an integral part of the government policy pursued by the program to transform the city into parks. Projects such as Marina Bay Sands and Gardens by the Bay Sunenergiyasi,

2. Germany-Energiewende program: Germany is a leading country in the field of green infrastructure, encouraging the production of renewable energy sources. In the field of tourism, this is done with the help of solar energy, wind farms and biogas equipment. At the same time, ecological hotels and eco-tourism centers are widely developed in this state.

3. Denmark – Copenhagen Bicycle Network: Copenhagen is one of the greenest cities in the world, where bicycles are widely used in urban transport. Special bike paths, electric bike rental options and convenient transportation infrastructure help make tourism in this city environmentally friendly.

4. New Zealand-nature-oriented tourism: New Zealand is famous for its stunning natural landscapes, where eco-tourism is actively developing. National parks and reserves are maintained in a natural state, and conservation measures are carried out in them. This allows travelers to walk without harming nature.

<sup>3</sup>5. USA-Green Buildings and LEED certification: Among the green infrastructure services in the USA, there are many LEED-certified buildings that require the use of energy-saving and environmentally friendly materials. Recycled water and waste management systems are often used in hotels and resorts.

6. The Netherlands- Water management systems: The Netherlands has advanced experience in water management and the development of green water-related infrastructure. For example, great attention is paid to controlling the flow of water through a system of ponds and dams, flood prevention and conservation of natural water resources.

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<sup>2</sup> .United Nations Environment Programme (UNEP). Green Infrastructure for Sustainable Development. UNEP Publications, 2021 .

3..Green Uzbekistan. "O'zbekistonda yashil infratuzilmani rivojlantirish: loyihalar va strategiyalar." Green Uzbekistan sayti, 2022.  
<https://www.greenuzbekistan.uz>

7. Japan-Landscaped roofs: Landscaped roofs and vertical gardens are widely represented in Japan. This allows not only to improve the urban environment, but also to improve air quality and create a favorable tourist environment.

The experience of foreign countries in the field of green infrastructure is largely based on state policy and the development of environmental awareness, these principles play an important role in ensuring sustainability in the field of tourism, transport and urban infrastructure. At the same time, foreign experience can be a useful example for the development of green infrastructure in local conditions.

#### DICCUSSION

<sup>4</sup>The use of green infrastructure services in the field of tourism is associated with ensuring environmental sustainability, creating comfortable conditions for tourists without compromising nature. These types of services may include:

1. The use of eco-hotels and eco-houses: green hotels and residential buildings with energy-efficient lighting systems, solar panels and water recycling systems. These hotels have a waste recycling system that uses environmentally friendly products.

2. Development of natural territories: creation and management of infrastructure of natural parks, national parks and reserves. Structures such as sidewalks, bridges, and signs preserve the natural environment and allow visitors to travel safely.

3. Ecological transport: reducing carbon dioxide emissions by providing tourist attractions with the opportunity to ride electric buses, bicycles or on foot.

4. Environmental protection activities: the development of ecological culture by educating and informing tourists about environmental safety, conservation, and waste management.

5. Water saving and recycling systems: to help reduce water shortages through the efficient use of water resources at tourist sites, wastewater recycling and the use of rainwater harvesting technologies.

6. The use of local products and ecological agriculture: Green tourism services promote sustainable agriculture by supporting the consumption of local food, local customs and culture.

7. Waste management and environmental sanitation: work with waste recycling and reduction programs, natural waste disposal using composting technologies.

<sup>5</sup>The program of transition to a "green" economy and ensuring "green" growth until 2030 in the Republic of Uzbekistan, based on the priority directions of transition to a "green" economy, provides the regions with the necessary resources and opportunities for integrated socio-economic development, expanding the scope of public services on climate change, increasing the economic activity of the population in the field of "green" the economy is expanding the participation of the population and the local community;

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<sup>4</sup> World Bank. Sustainable Infrastructure: A Policy Framework for Sustainable and Inclusive Infrastructure Development. Washington D.C.: World Bank Publications, 2020.

<sup>5</sup> O'zbekiston Respublikasi Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi. "Barqaror rivojlanish strategiyasi va yashil iqtisodiyotga o'tish." Ekologiya qo'mitasi nashri, 2023.

## ANALYSIS AND RESULTS

strengthening the technological competencies of public and private organizations in planning, implementing, evaluating the results of actions and measures for the transition to a "green" economy -conducting trainings for middle and technical personnel of interested government agencies and private organizations;

Training of trainers on green growth, climate change resilience — development and implementation of short-term training courses for instructors for educational, research and other capacity-building institutions;

Support the provision of educational and consulting services to private commercial and non-profit organizations through the provision of small grants-the provision of small grants to private commercial and non-profit organizations to cover the costs of conducting public lectures, conferences and seminars on the "green" economy;

<sup>6</sup>Foreign countries have managed to carry out a number of positive reforms to improve the literacy of the population in the field of green tourism. In particular, improving carbon literacy in the green tourism sector: consider the selected country approaches:

Colombia: An online learning platform with hands-on interactive content aims to develop skills related to best practices in sustainable tourism for the travel business. An additional online course on sustainable gastronomy was launched in October 2020 in collaboration with the World Wildlife Fund of Colombia and the United Nations Environment Programme.

Malta: The Ministry of Tourism, in collaboration with SUNX (strong Universal Network), is working to accelerate action on climate change by developing a Climate travel capacity building diploma for the next generation of tourism and climate ambassadors.

New Zealand: Aotearoa Tourism Industry Association Carbon Challenge encourages tourism businesses to measure their carbon footprint, take measures to significantly reduce carbon emissions by 2030 and contribute to the zero carbon tourism sector in line with New Zealand's 2050 goals. The carbon issue complements the commitment to sustainable tourism and the two quality and sustainability programs available to Qualmark businesses.

Peru: The Ministry of Foreign Trade and Tourism, in cooperation with the Ministry of Energy and Mining, has developed an environmental performance guide for the hotel sector in order to improve energy management. The Ministry of Foreign Trade and Tourism is in the process of harmonizing a system of "best practices" aimed at promoting the practice of reducing greenhouse gas emissions for tourism service providers using a closed-loop economy, clean technologies and environmentally friendly technologies. He also worked with the Ministry of the Environment to develop a Peruvian carbon footprint tool for tourism enterprises.

Green infrastructure services are important for achieving environmental sustainability, effective management of natural resources and the creation of a healthy living environment. The introduction of green infrastructure is especially necessary in Uzbekistan to solve

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<sup>6</sup> Smith, J., & Zhang, L. "Green Infrastructure and Urban Sustainability: A Review." *Journal of Environmental Science and Policy*, vol. 12, no. 3, 2022, pp. 57-75. Ivanova, D., et al. "The Role of Renewable Energy in Sustainable Development: A Comparative Study." *Energy Policy*, vol. 54, 2021, pp. 130-140.

environmental problems, develop tourism and ensure energy conservation. These services play an important role in ensuring the rational use of natural resources, environmental protection and socio-economic stability. As world experience shows, Green infrastructure contributes to the development of ecological culture in society, leading to sustainable economic growth.

### CONCLUSIONS AND PROPOSALS

1. Public-private sector cooperation: It is necessary to strengthen cooperation between the public and private sectors in the development of green infrastructure. Investors can be attracted by providing special grants and tax incentives.

2. Strengthening environmental legislation: it is necessary to develop and implement laws and standards that support green infrastructure, as well as use international norms in this regard.

3. Improving environmental literacy of the population: it is necessary to inform the population about the benefits of green infrastructure and educate them on environmental issues. It is necessary to promote the development of a green infrastructure culture through environmental education programs.

4. Focus on renewable energy sources: it is necessary to promote the widespread use of solar, wind and biogas energy and introduce these technologies into tourism and rural areas.

5. Creating an environmentally friendly transport system: increasing investments in the introduction of electric vehicles in cities, the development of bicycle paths and improving the energy efficiency of public transport.

6. Development of waste management systems: strengthening the waste separation and recycling system, especially the introduction of environmental waste management and recycling technologies in tourist centers.

7. Landscaping and water saving: landscaping of cities and tourist attractions, as well as the introduction of water-saving technologies. Improving air quality and creating a favorable tourist environment through plants and green spaces.

The widespread introduction of green infrastructure services contributes to environmental sustainability, social well-being and economic development in Uzbekistan. By putting these proposals into practice, positive results can be achieved in the development of the green economy and eco-tourism in the country.

### List of used literature:

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