Chapter 9
Assessment of Blue-Green Infrastructure Integration: Socio-Economic Aspect

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ABSTRACT

The purpose of this study is to analyse the social, environmental and economic impacts of integrating blue-green infrastructure into the urban environment. The article theoretically examines the main components of the blue-green economy, assesses their environmental, economic and social outcomes, and formalises these outcomes through indicators and metrics. The study examines the impact of Kharkiv's blue-green infrastructure on the health and well-being of the city's residents. It analyses how the integration of such infrastructure affects the gross regional product, as well as its role in achieving the sustainable development goals set out in international and national strategic documents. The study estimates the benefits and costs of implementing blue-green infrastructure, which helps to make informed decisions and ensure that projects are in line with sustainable development goals.

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INTRODUCTION

Blue-green infrastructure (BGI) is an important element of modern urban planning strategies that has a significant impact on the environmental, social and economic state of cities. The inclusion of water (blue) and green (vegetated) elements in the urban environment not only improves its environmental condition, but also has a profound impact on the socio-economic aspects of the lives of citizens. Blue-green infrastructure can include a variety of components such as parks, green spaces, reservoirs, water systems for rainwater harvesting, and other elements that support natural processes and improve the quality of life.

Blue-green infrastructure is critical to improving the environmental health of cities. Green spaces contribute to air purification by absorbing pollutants and producing oxygen, and help reduce the urban heat island effect. Water systems play a role in regulating the water balance and preventing flooding, as well as in preserving biodiversity. Integrating these elements into the urban environment helps to create a more sustainable and healthy environment for residents.

In addition to its environmental benefits, blue-green infrastructure has a significant social and economic impact. It improves the quality of life for residents by creating spaces for recreation, physical activity and social interaction. Green infrastructure can also increase property values and attract investors, leading to economic growth and job creation. However, the implementation of such projects is often capital-intensive and costly, which poses a challenge for local authorities, especially when budgets are tight.

European investors and international organisations often focus on projects that promote sustainable development and have a long-term perspective. This means that local authorities need to demonstrate that BGI projects are in line with the principles of sustainable development and provide real benefits to the urban population.

The purpose of the study is to assess the social, environmental and economic results of integrating blue-green infrastructure into urban development:

- To theoretically investigate the main components of the blue-green economy in terms of environmental, economic and social results from their implementation. Formalise these results (translate them into indicators and metrics).

- To study the impact of blue-green infrastructure on the health and well-being of city residents, including reducing stress and improving mental health.

- To determine the impact of blue-green infrastructure integration on the change in gross regional product in terms of economic efficiency.

- Explore how the integration of blue-green infrastructure contributes to the achievement of sustainable development goals set out in international and national strategic documents

The development of the methodology will allow for a more accurate assessment of the benefits and costs of implementing blue-green infrastructure, which will help make informed decisions about its integration into urban development and ensure that projects meet the goals of sustainable development.