

Strategy for Addressing the Impact of Climate Change on Ecosystem Service Interactions in the Management of Forest Resources in Belgrade

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Abstract

Forest and forest land ecosystem services are of immense importance for the city of Belgrade. However, ecosystem degradation leads to irreversible loss of functions and services, which ultimately compromises human well-being. Evaluating ecosystem services, including their economic valuation, supports decision-making processes and involves local communities and stakeholders.

This strategy assesses the vulnerability and resilience of forests in Belgrade and their potential for adaptation to climate change by developing climate models incorporating varying greenhouse gas concentration scenarios.

Key challenges identified include the adverse effects of climate change, population growth, increased demand for food and energy, and urban sprawl, all of which collectively threaten natural resources and biodiversity.

Based on research into the ecosystem services of forests and forest ecosystems in Belgrade, as well as the impacts of various climate change scenarios, goals were set for 2050, with impact projections through 2100. The findings indicate substantial transformations in forest stand composition, including the local extinction of numerous species and the colonization of habitats by predominantly invasive species. This document proposes a model for identifying and evaluating ecosystem services and analyzing their temporal changes due to the persistent effects of climate change, particularly global atmospheric warming.

A participatory approach was employed in the strategy's development, involving public engagement through surveys, interviews (one semi-structured interview), and workshops (seven conducted using focus group methodologies and one utilizing the Delphi technique). This process resulted in the formulation of 10 specific objectives with a total of 70 measures and activities designed for implementation by 2030.

The strategy was formally adopted by the Belgrade City Assembly on December 26, 2022, and published in the Official Gazette No. 112/22.