### MILANKOVIĆ'S THEORY OF CLIMATE CHANGES-**HUNDRED YEARS AFTERWARDS**

**МИЛАНКОВИЋЕВА ТЕОРИЈА** КЛИМАТСКИХ ПРОМЕНА-СТО ГОДИНА ПОСЛЕ





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Београд, Belgrade 4-5.11.2024.

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## INTERNATIONAL CONFERENCE MILANKOVIĆ'S THEORY OF CLIMATE CHANGES – HUNDRED YEARS AFTERWARDS

MEĐUNARODNA KONFERENCIJA MILANKOVIĆEVA TEORIJA KLIMATSKIH PROMENA – STO GODINA POSLE

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## 25. Innovative approach to forest management to mitigate the impacts of climate extremes in forest ecosystems in Serbia

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Abstract: The increase in annual maximum and minimum temperatures, the amount and distribution of precipitation during the growing season, the frequency of extreme weather events (drought, floods, superstorms, ice breaks, snow breaks) and other climate phenomena have a variety of negative impacts on forest ecosystems in Serbia. Most projections of future climate changes scenarios (SRES - Special Report on Emissions Scenarios, IPCC, 2000, 2001, 2007, 2014, 2019, 2023, Climate Change 2022: Impacts, Adaptation and Vulnerability) indicates to temperature and precipitation significant changes, as well as increasing concentrations of greenhouse gases in the atmosphere, that will caused many ecological problems and affected on sustainable development across the world. Results of research on climate parameters in Serbia for the period 1972-2022, normalized deviations and linear trends of air temperature and precipitation amount indicate an increased risk of drying out forest crops and natural forests on larger areas. Unfavorable climatic conditions caused by a further increase in temperatures, occurrences of drought and extreme amounts of precipitation in a short period, can leave long-term consequences on the distribution, function and production of forest ecosystems. The main challenge in the management of forests is the development of innovative adaptation measures to reduce the vulnerability of forests and the consequences due to possible different scenarios of climate change. In order to reduce the vulnerability of forests and the possible consequences of different climate change scenarios and to preserve and protect forest ecosystems, an innovative approach to forest management is needed, applying the principle of integral environmental protection. By afforesting suitable species that are more resistant to climate change, improving the condition of forests and applying appropriate adaptive forest management, it is possible to significantly mitigate the negative effects of climate change.

**Key words:** extreme weather events, climate changes scenarios, adaptible forest management, afforestation, Serbia.

## 26. Strategies for rural area development in the context of changing climate conditions

#### Andrijana Stanković

Abstract: Climate change poses a significant challenge to rural areas, affecting agricultural production, land use, resource availability, and economic development. To mitigate the negative impacts of climate change and ensure the sustainability of local communities, it is essential to explore innovative development strategies for these regions, which is the objective of this paper. The focus of sustainable planning is on adapting agricultural practices, preserving natural resources, developing climate-resilient infrastructure, and strengthening local capacities to respond to climate risks. Through an analysis of successful examples from various parts of the world and their application to the specific conditions

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