



ARTIFICIAL INTELLIGENCE IN INTEGRATED DISASTER RISK MANAGEMENT: SUSTAINABILITY AND HUMAN SECURITY IN SERBIA

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Abstract

The Republic of Serbia has officially decided to integrate sustainability principles into its development framework. It is implementing it in accordance with the principles of sustainable development of the European Union and the United Nations. The goal is to establish a balance between economic growth, environmental protection, social inclusion, and institutional resilience. The National Strategy for Sustainable Development of the Republic of Serbia (NSSD) is a strategic public policy document adopted by the Government in 2008. This strategy represents the first comprehensive framework for integrating economic development, environmental protection, and social cohesion into a single, long-term development vision. Although the NSSD formally expired in 2017, its principles continue to influence public policy-making. The paper analyzes the implementation of sustainability principles in Serbia from the perspective of human security, emphasizing the protection of citizens and communities from economic, environmental, health, food, and institutional risks. The analysis identifies significant implementation shortcomings: formal sustainability policies fail to reduce vulnerability, exposure, and inequality sufficiently. Weak coordination among environmental, health, social, and infrastructure policies limits the impact of sustainability principles on human security, especially for vulnerable social groups and endangered regions.

Artificial intelligence (AI) offers significant potential to overcome these shortcomings by enabling proactive, data-driven, cross-sectoral governance. The application of AI can improve environmental monitoring, health risk forecasting, energy and infrastructure system resilience, social vulnerability mapping, and policy impact assessment. However, AI achieves its full potential only when used as a decision-support tool, integrated into institutional processes, and supported by interoperable data systems, ethical safeguards, and ongoing human oversight. Based on the above insights, this paper proposes an AI-based governance architecture to improve sustainability in Serbia. This conceptual governance model is designed as an integrative and adaptive framework that, grounded in the principles of human security, should contribute to reducing the risk of natural and other disasters through evidence-based decision-making and institutional coordination.

Keywords

sustainability, human security, artificial intelligence, governance architecture, institutional coordination.

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