SERBIAN ACADEMY OF SCIENCES AND ARTS

University of Novi Sad | Faculty of Sciences
DEPARTMENT OF GEOGRAPHY, TOURISM AND HOTEL MANAGEMENT

INTERNATIONAL CONFERENCE

NATURAL RESOURCES AND ENVIRONMENTAL RISKS:
Towards a Sustainable Future

ABSTRACT BOOK

Novi Sad, 2023

SERBIAN ACADEMY OF SCIENCES AND ARTS

University of Novi Sad | Faculty of Sciences
DEPARTMENT OF GEOGRAPHY, TOURISM AND HOTEL MANAGEMENT

INTERNATIONAL CONFERENCE

NATURAL RESOURCES AND ENVIRONMENTAL RISKS:
Towards a Sustainable Future

ABSTRACT BOOK

Novi Sad, 2023

SERBIAN ACADEMY OF SCIENCES AND ARTS

University of Novi Sad | Faculty of Sciences
DEPARTMENT OF GEOGRAPHY, TOURISM AND HOTEL MANAGEMENT

INTERNATIONAL CONFERENCE

NATURAL RESOURCES AND ENVIRONMENTAL RISKS:

Towards a Sustainable Future

Editor in Chief

Slobodan B. Marković
Corresponding member of SASA
Milica Pavkov Hrvojević
Dean of Faculty of Sciences
Lazar Lazić
Director of Department for Geography, Tourism and Hotel Management

Editorial Board

Tin Lukić
Slobodan B. Marković
Lazar Lazić
Nemanja Tomić
Milica G. Radaković

Printed by

Sajnos, Novi Sad

Circulation

150

GIS-based Landslide Susceptibility Mapping and Assessment using MCDM-BWM: A Case Study – City of Smederevo (Serbia)

Dedanski, V.[*][(1)], Durlević, U.[(1)], Kovjanić, A.[(1)], Lukić, T.[(1,2)]

[(1)] Faculty of Geography, University of Belgrade, Studentski Trg 3/III, 11000 Belgrade, Serbia
[(2)] Department of Geography, Tourism and Hotel Management, Faculty of Sciences, University of Novi Sad, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia
[*] Corresponding author: vojislav.dedjanski@gef.bg.ac.rs

Landslides and slope processes constitute one of the most frequent natural hazards in valleys near major rivers and mountainous regions. The surface layer, characterized by its relatively loose composition, is prone to sliding due to a combination of distinct natural and human-related factors (i.e. landslide causal factors (CF)). Along the right bank of the Danube River, specific sections of Smederevo city face considerable susceptibility to landslide activation, frequently resulting in substantial material losses and posing a risk to the local populace. This study entails on-site investigation, involving the mapping of recent landslides, coupled with database analysis through Geographic Information Systems (GIS) and advanced remote sensing techniques. The initial analysis encompasses geological characteristics, morphometric conditions, hydrological and climatic factors, as well as anthropogenic influences such as land use, all contributing to soil instability. Employing GIS alongside the Multi-Criteria Decision-Making (MCDM) technique, specifically the Best-Worst Method (BWM), yielded insights into landslide susceptibility within the territory of Smederevo city respectively. By visualizing areas highly prone to such disastrous occurrences, policymakers are empowered to enact more suitable environmental protection measures and institute sustainable management practices for agricultural parcels in this region.

Keywords: landslides, City of Smederevo, causal factors, GIS, MCDM, BWM, natural and anthropogenic factors, visualization.