

TABLE OF CONTENT

	PREFACE	7
1.	INTRODUCTION	9
2.	TERMINOLOGY AND BACKGROUND	13
2.1	Landslide Phenomenology – Definitions and Scope	14
2.2	Susceptibility, Hazard and Risk – Definitions and Scope	18
2.3	Landslide Assessment Concepts, Principles and Problems ...	20
2.3.1	<i>Data Acquisition Issues in Landslide Assessment</i>	21
2.3.2	<i>Modeling Approach Issues in Landslide Assessment</i>	25
2.3.3	<i>GIS Issues in Landslide Assessment</i>	27
2.3.4	<i>Machine Learning Issues in Landslide Assessment</i>	29
2.3.5	<i>Other Issues in Landslide Assessment</i>	31
3.	RELATED WORK	34
4.	METHODS AND PROCEDURES	43
4.1	Attribute Selection Methods	43
4.1.1	<i>Chi-Square</i>	45
4.1.2	<i>Information Gain (IG)</i>	46
4.2	Landslide Assessment Methods	46
4.2.1	<i>Heuristic Approach</i>	46
4.2.2	<i>Statistical Approach</i>	50
4.2.3	<i>Machine Learning Approach</i>	58
4.2.4	<i>Deterministic Approach</i>	72

4.3	Model Evaluation Methods.....	76
4.3.1	<i>Kappa Statistics</i>	77
4.3.2	<i>Receiver Operating Characteristics (ROC)</i>	78
4.4	Research Workflow	79
4.5	Data and Software Specifications for Different Methods	80
5.	CASE STUDIES.....	83
5.1	Fruška Gora Mountain (Serbia)	84
5.1.1	<i>Setting</i>	84
5.1.2	<i>Dataset</i>	87
5.1.3	<i>Implementation, Results and Discussion</i>	101
5.2	Starča Basin (Croatia)	124
5.2.1	<i>Setting</i>	124
5.2.2	<i>Data</i>	126
5.2.3	<i>Implementation, Results and Discussion</i>	133
5.3	Halenkovice Area (Czech Republic).....	139
5.3.1	<i>Setting</i>	141
5.3.2	<i>Data</i>	143
5.3.3	<i>Implementation, Results and Discussion</i>	151
6.	MAIN ACHIEVEMENTS.....	163
7.	GENERAL DISCUSSION	166
8.	CONCLUSIONS.....	169
8.1	Applicability	171
8.2	For Further Notice	171
9.	REFERENCES	174
	List of abbreviations	184
	Appendices	186
	SHRNUTÍ.....	195
	SAŽETAK.....	199