

Supplementary Material for

“Introducing a global geospatial database and GIS techniques as a decision-making tool, for multicriteria decision analysis methods in landslides susceptibility assessment”

Constantinos Nefros and Constantinos Loupasakis

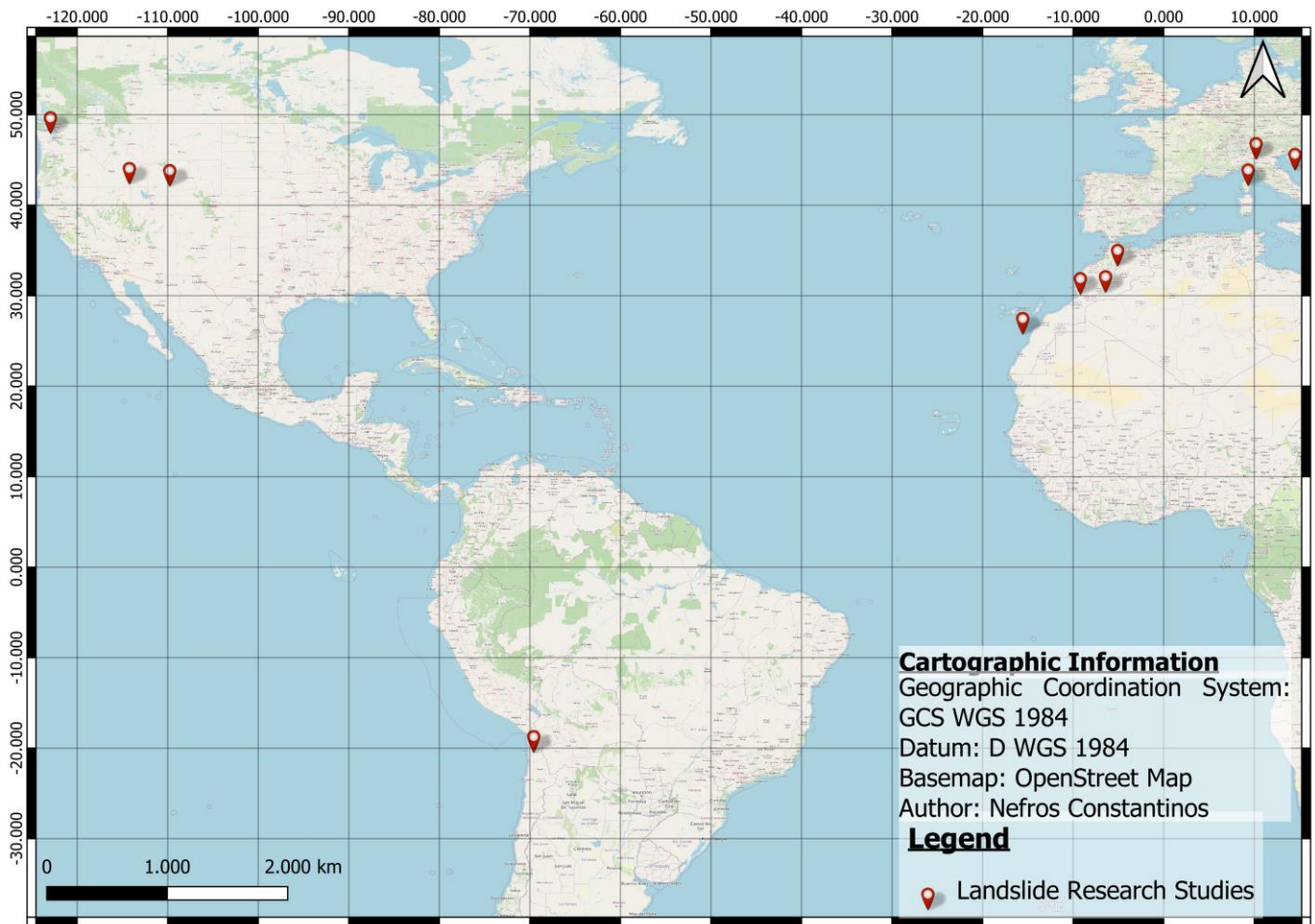
correspondence to: kostasnefros@central.ntua.gr

The pdf Supplementary Material (SM) for the manuscript includes:

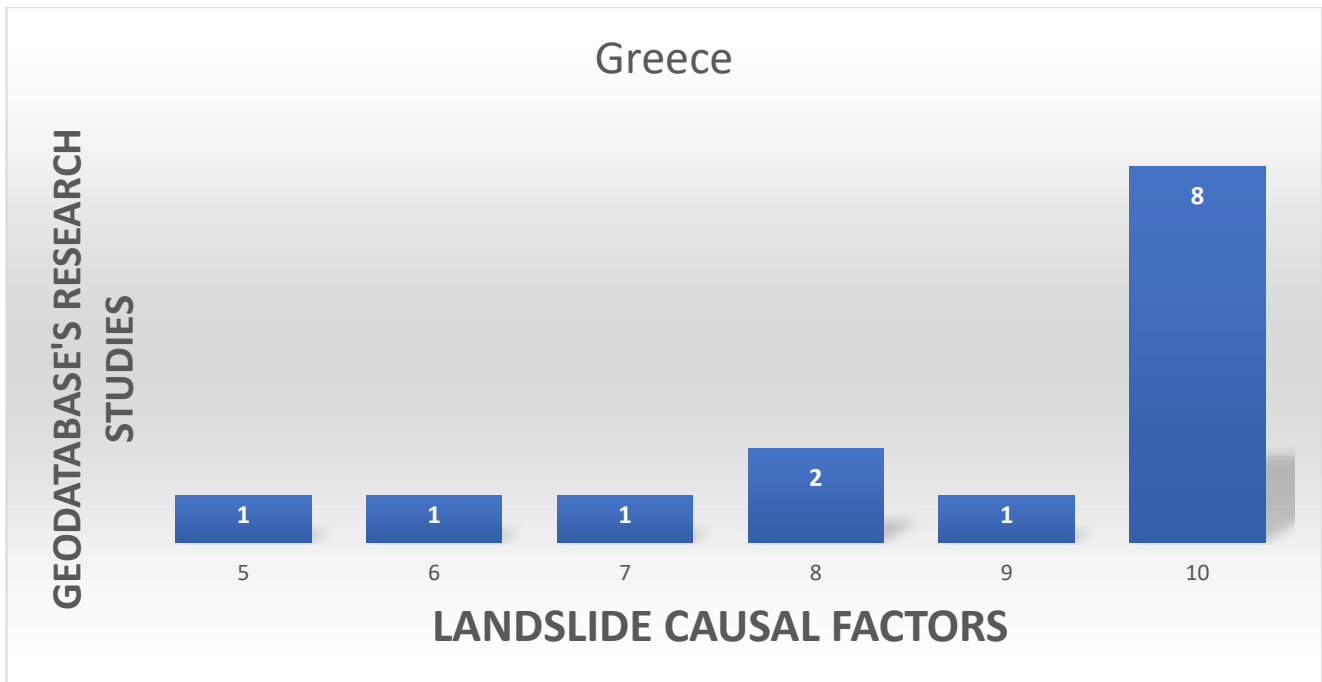
SM - Figures 1- 16

SM - Tables 1-4

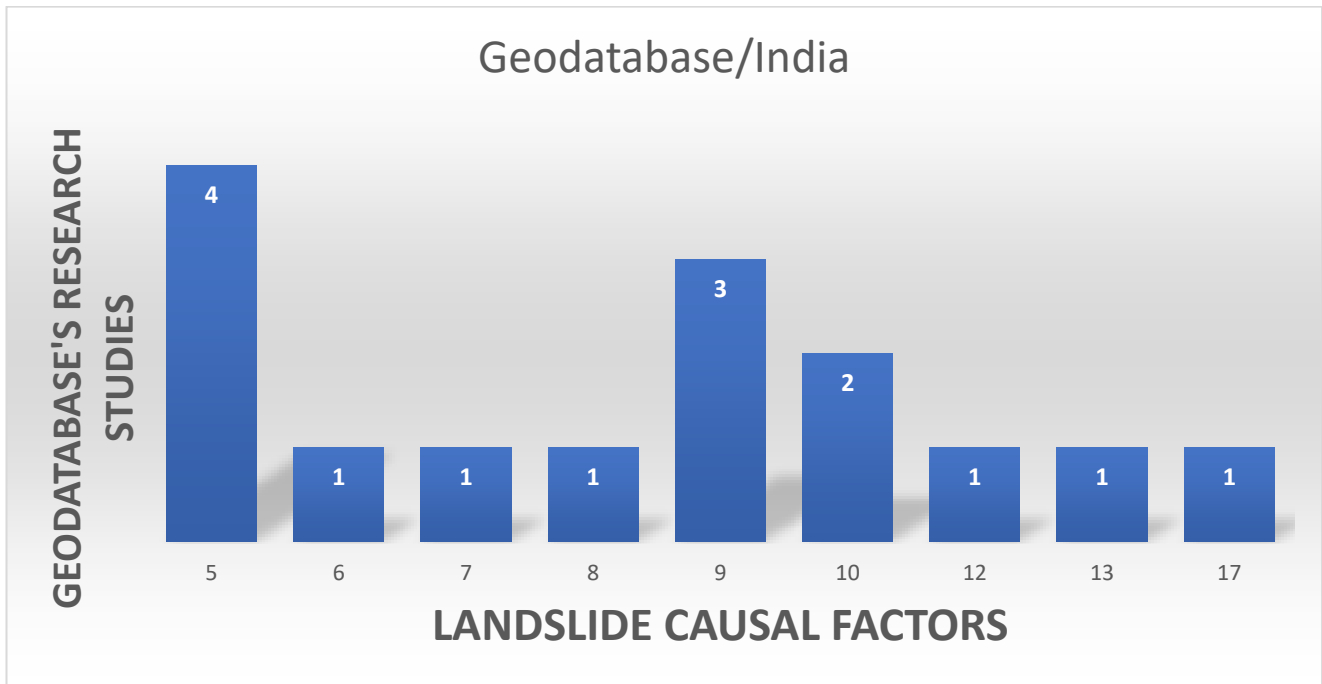
FIGURES



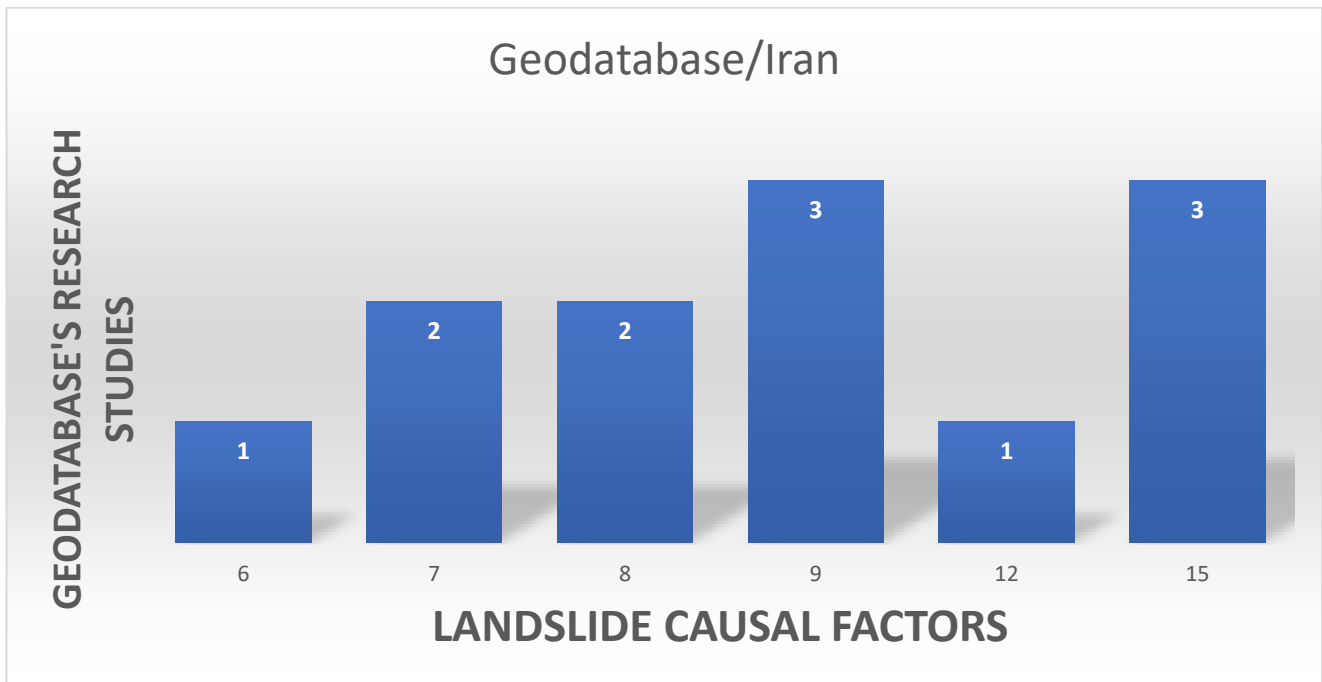
SM- Figure 1, Geodatabase’s Landslide Research Studies, focused on America.



SM- Figure 2, Number of the Geodatabase’s Research Studies according to the Causal Factors that they use in a national level/ Greece



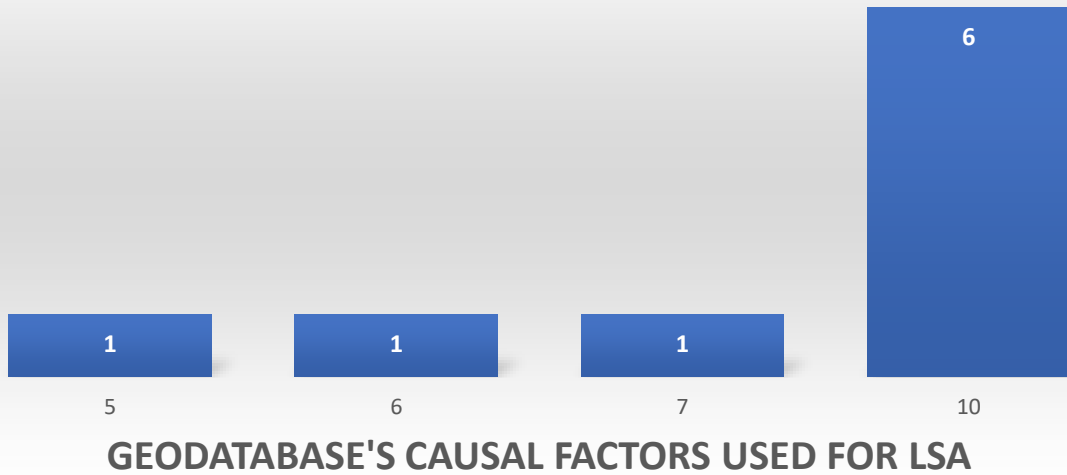
SM- Figure 3, Number of the Geodatabase's Research Studies according to the Causal Factors that they use in a national level/ India



SM- Figure 4, Number of the Geodatabase's Research Studies according to the Causal Factors that they use in a national level/ Iran

Geodatabase/Peloponnese Peninsula in Greece

GEODATABASE'S RESEARCH STUDIES

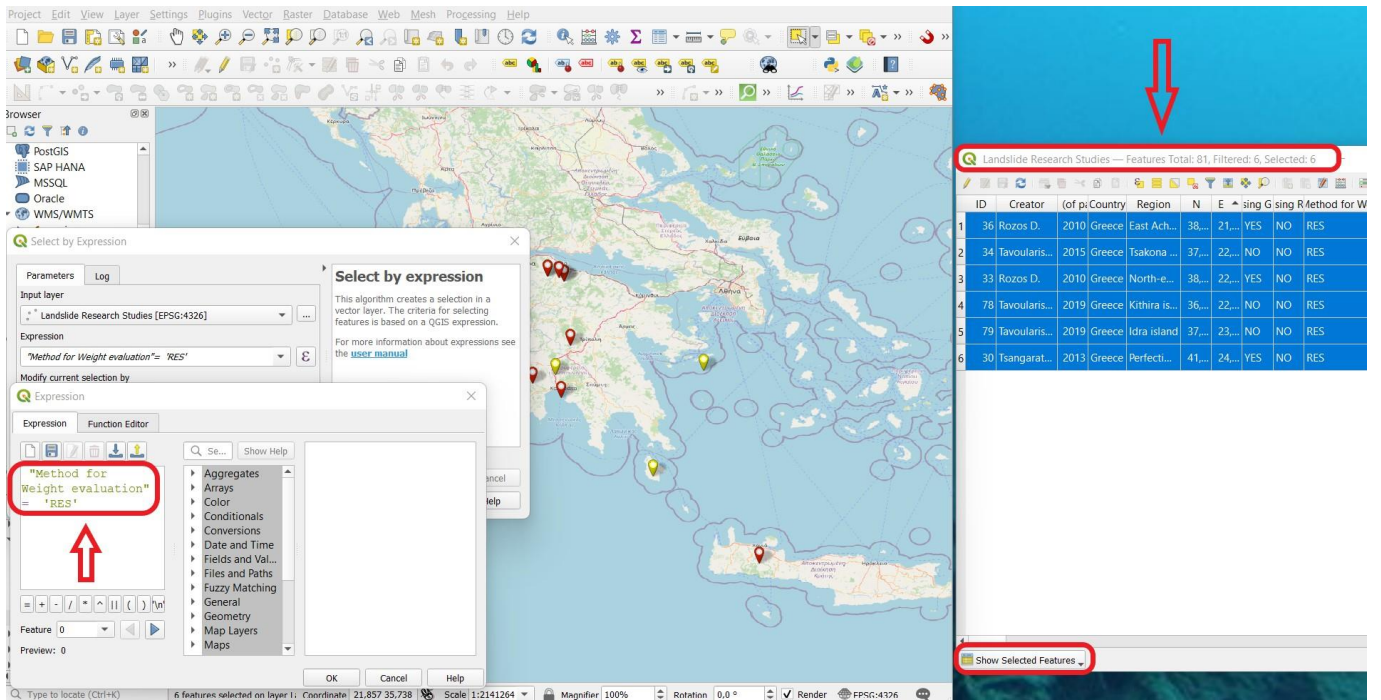


SM- Figure 5, Number of the Geodatabase’s Research Studies according to the Causal Factors that they use in a regional level/ Peloponnese peninsula Greece

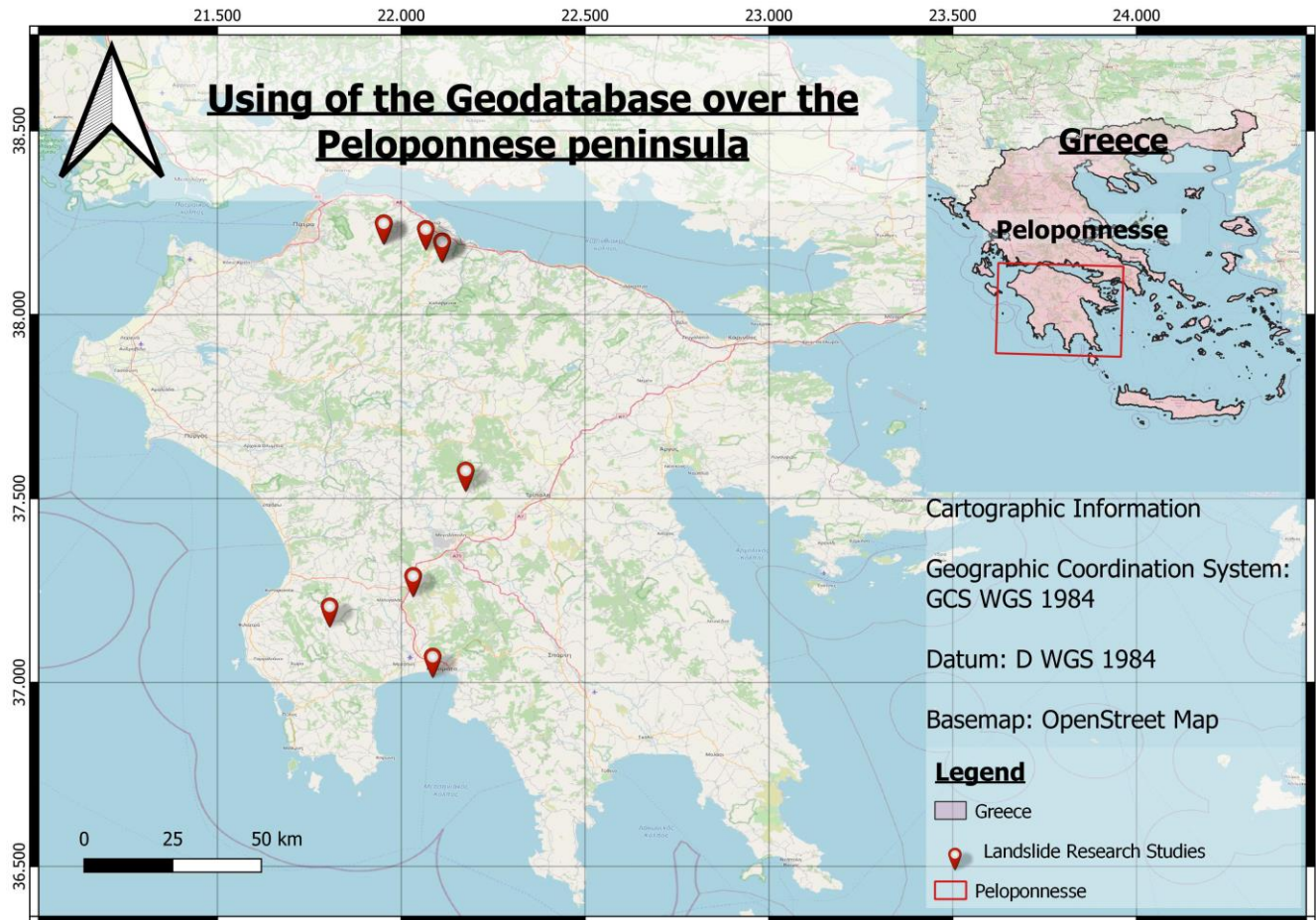
Expression: "Country" = 'Greece' AND "Rainfall/ Precipitation" > 0

ID	Creator	Date (of paper)	Country	Region	N
9	38 Dimitrios Myro...	2016	Cyprus	Western Cyprus	34,845296
10	11 Abay, Asmelash	2019	Ethiopia	Tarmaber District	10,013972
11	4 Ladas Ioannis	2007	Greece	North Messinia	37,221581
12	5 Ladas Ioannis	2007	Greece	East Messinia	37,084614
13	6 Chalkias Christos	2014	Greece	Peloponnese	37,59065
14	29 Tsangaratos P.	2013	Greece	Perfection of X...	41,172092
15	30 Tsangaratos P.	2013	Greece	Perfection of X...	41,172092
16	32 Rozos D.	2010	Greece	North-eastern ...	38,213509
17	33 Rozos D.	2010	Greece	North-eastern ...	38,213509
18	34 Tavoularis N.	2015	Greece	Tsakona area, A...	37,304144
19	35 Rozos D.	2010	Greece	East Achaia pre...	38,262845
20	36 Rozos D.	2010	Greece	East Achaia pre...	38,262845
21	68 Kavoura, Katerina	2019	Greece	North Pelopon...	38,247028
22	72 Kouli Maria	2014	Greece	West Crete Island	35,472935
23	78 Tavoularis, Niko...	2019	Greece	Kithira island	36,317549
24	79 Tavoularis, Niko...	2019	Greece	Idra island	37,344435
25	1 Jagabandhu Roy	2019	India	West Bengal	22,673267
26	19 Abhijit Sambha...	2019	India	Maharashtra	15,891389
27	22 S. Abdul Raha...	2014	India	Coonor and O...	11,489972
28	43 Rohan Kumar	2016	India	Tehri	30,385879

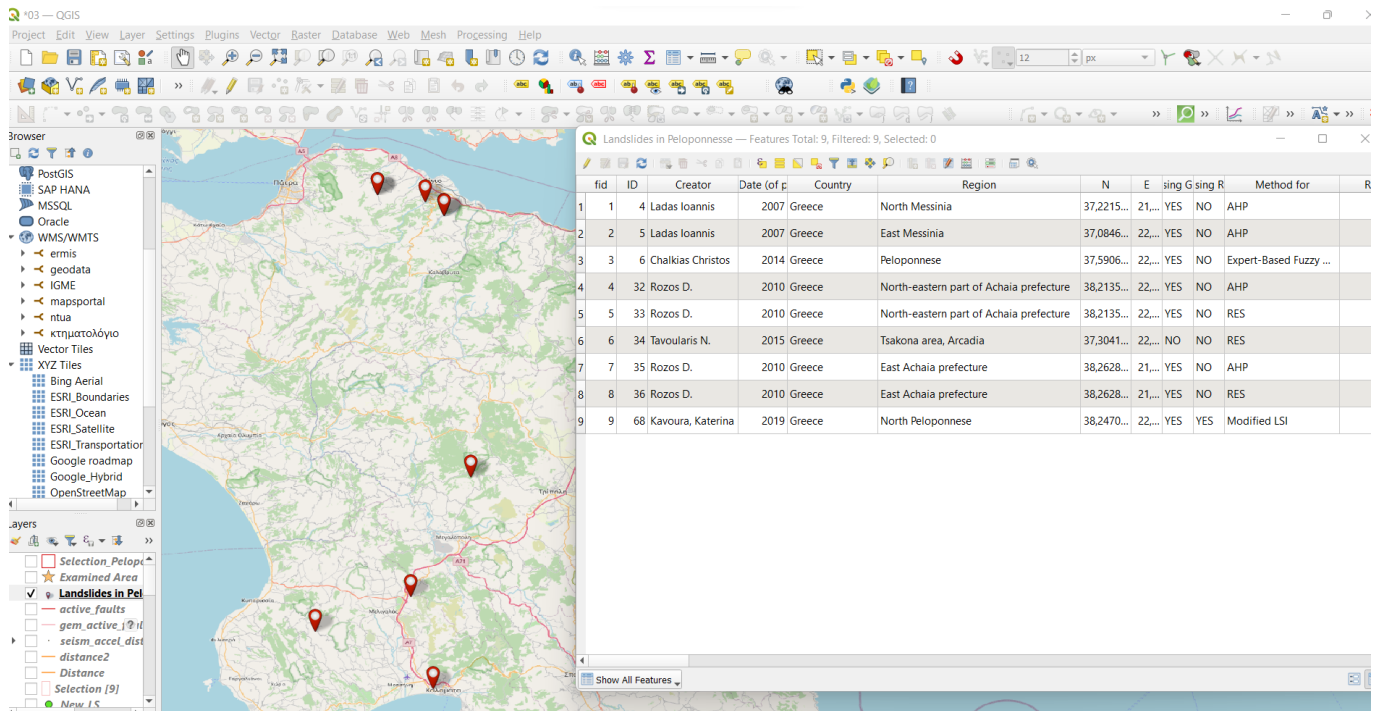
SM- Figure 6, Using GIS to express queries - background map Google Hybrid Map



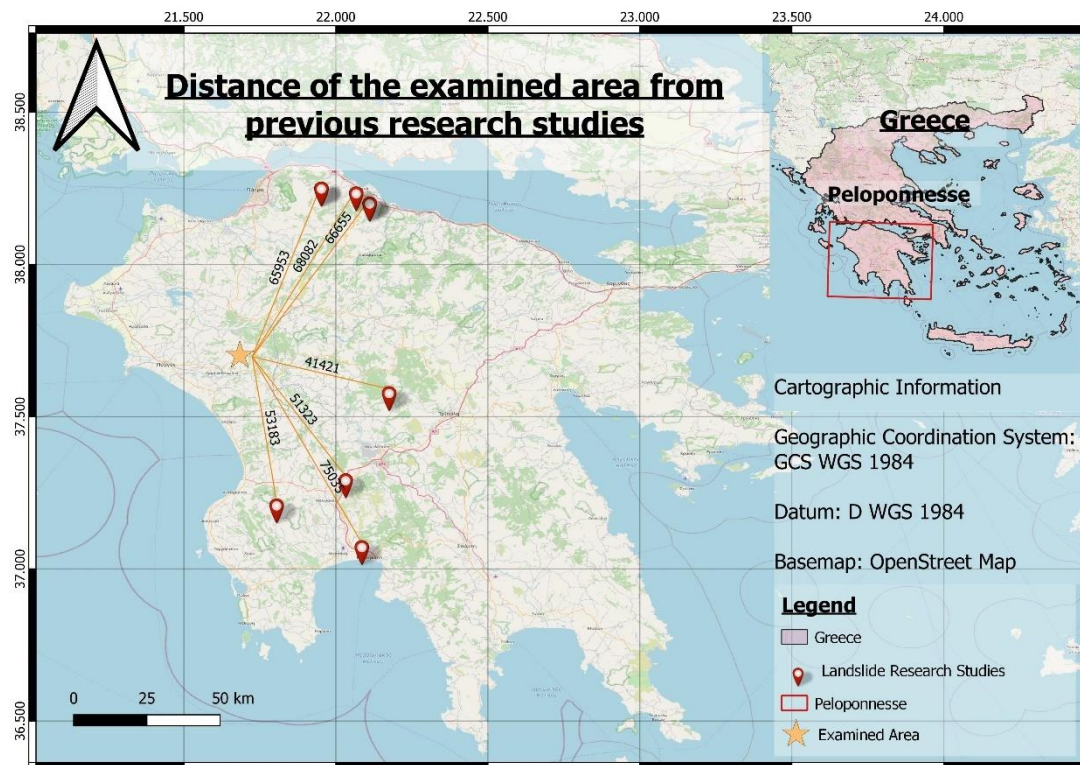
SM-Figure 7, Using a Query in GIS to include only a specific MCDA method (the RES method for this example)



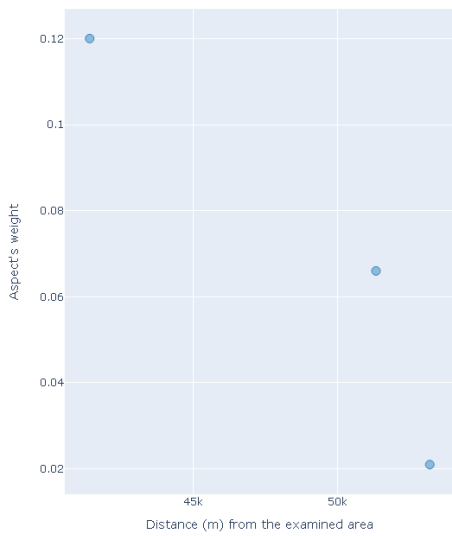
SM- Figure 8, Focusing of the Geodatabase over a particular area (It is significant to note that as it is referred to the manuscript, some research studies of the geodatabase, apply two or more MCDA methods in the same area, and therefore 7 pins are illustrated in this figure even though that the geodatabase, as it is shown in SM- Figure 8, contains 9 records)



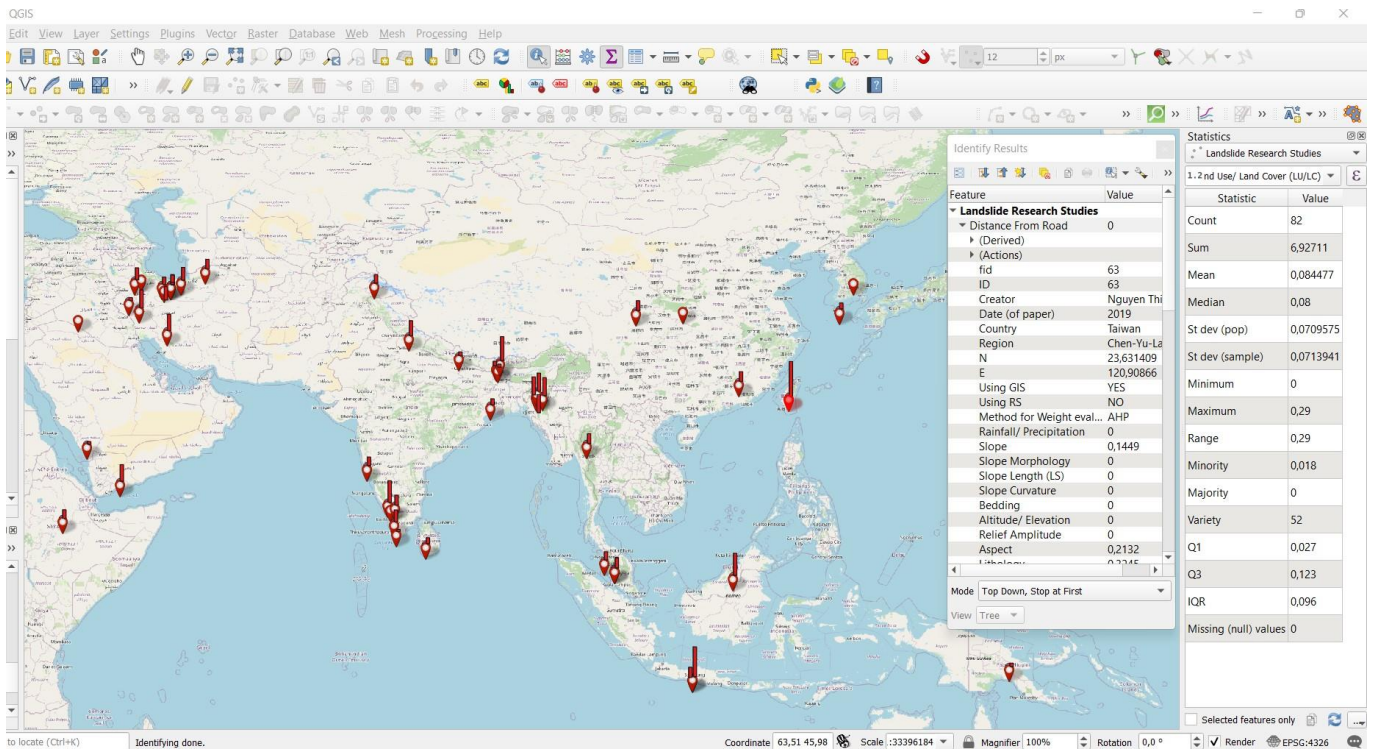
SM- Figure 9, Geodatabase's records for the Peloponnese peninsula. (Record with fid 4 is illustrated at the same position with fid 5 and the record with fid 7 is illustrated at the same position with fid 8)



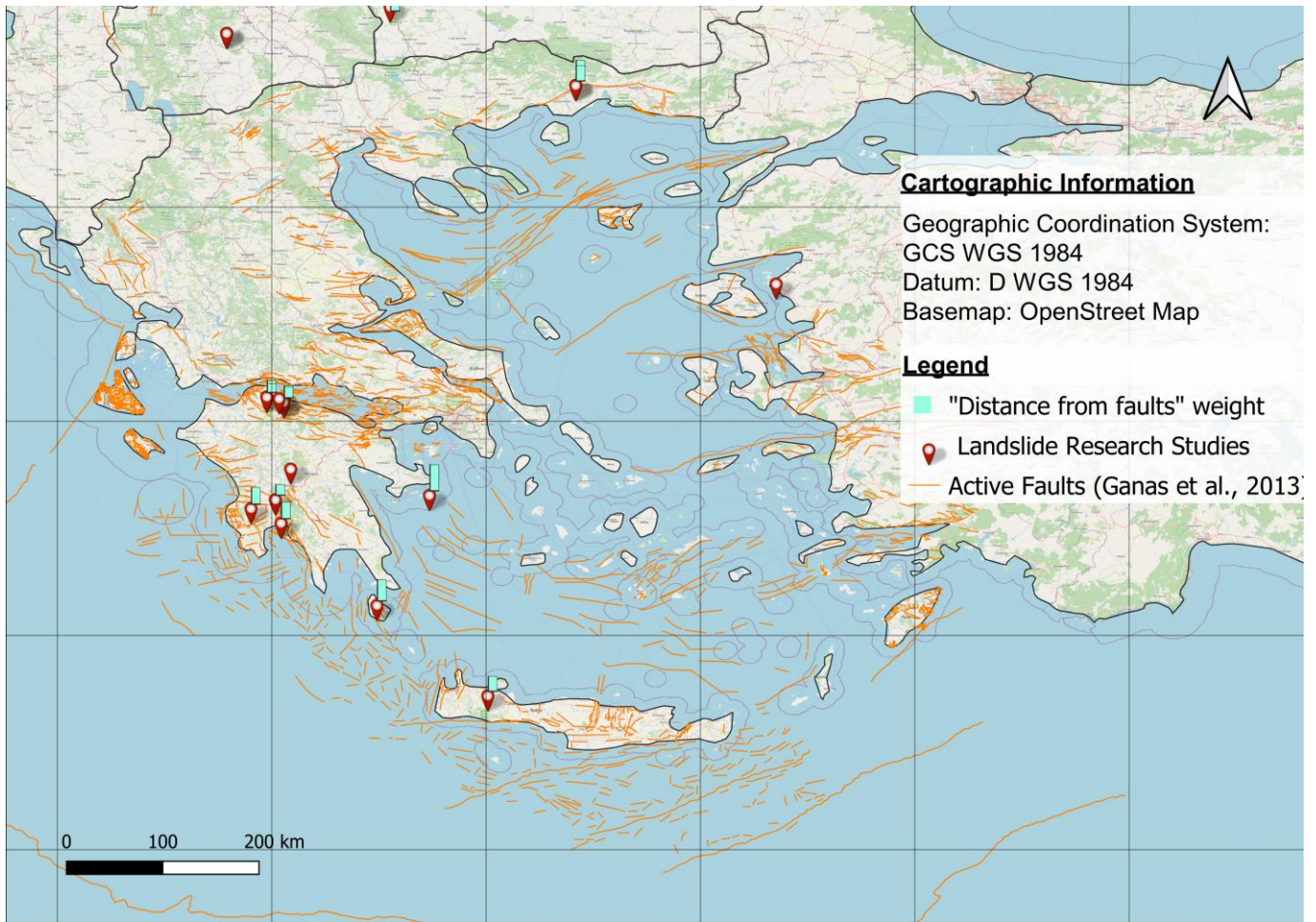
SM- Figure 10, Determining the distance of an examined area from the landslide records



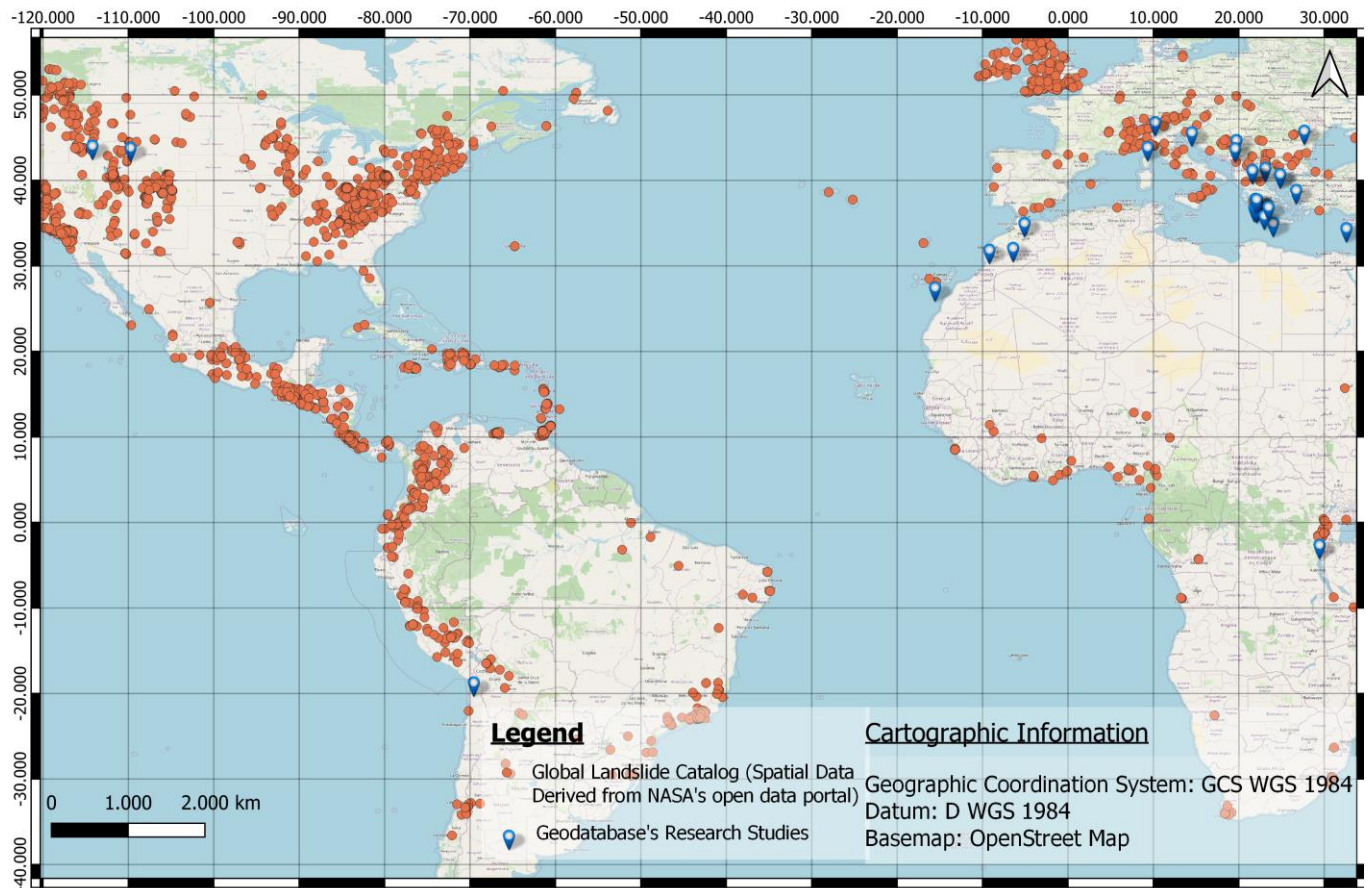
SM- Figure 11, Limiting the results of the geodatabase, by applying a distance- buffer of 60km from the examined area, which shows a gradual decrease in the weight of the causal factor slope aspect (from the 9 studies of the geodatabase in the Peloponnese peninsula-SM Figure 8, only 3 studies are in a buffer of 60Km from the examined area)



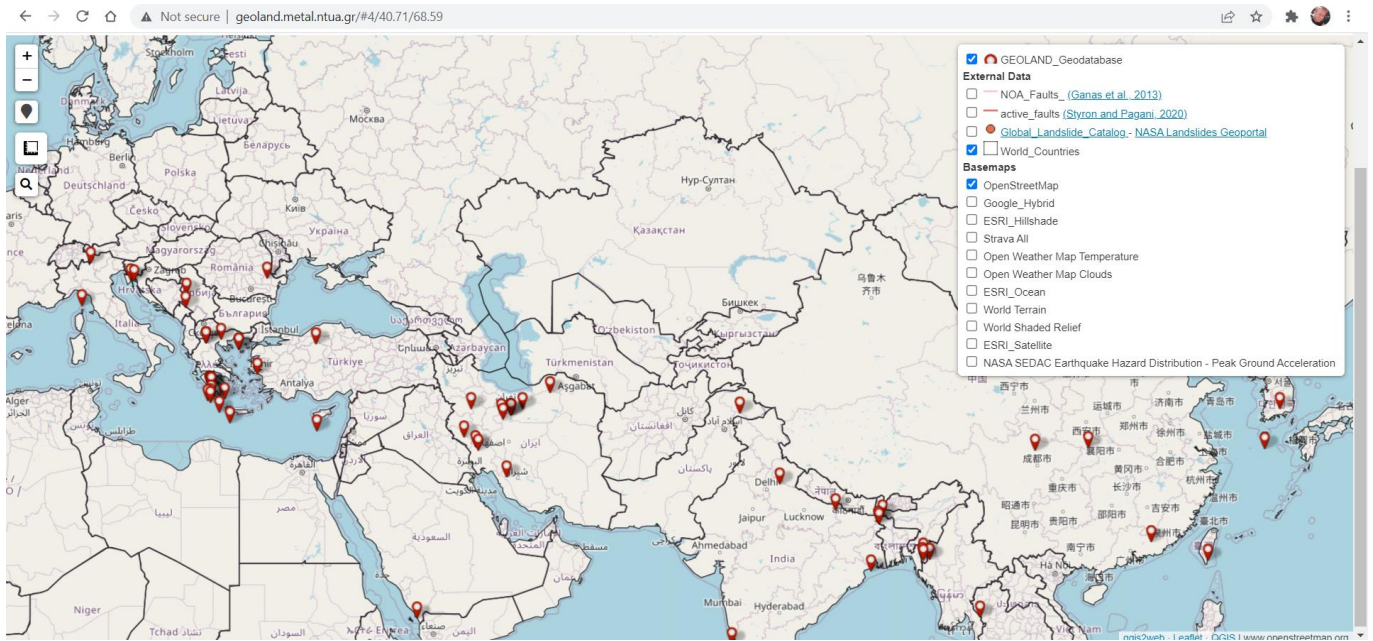
SM - Figure 12, Screenshot of using GIS program, that illustrates simultaneously spatial and statistical characteristics of a causal factor (Land Use/Land Cover)



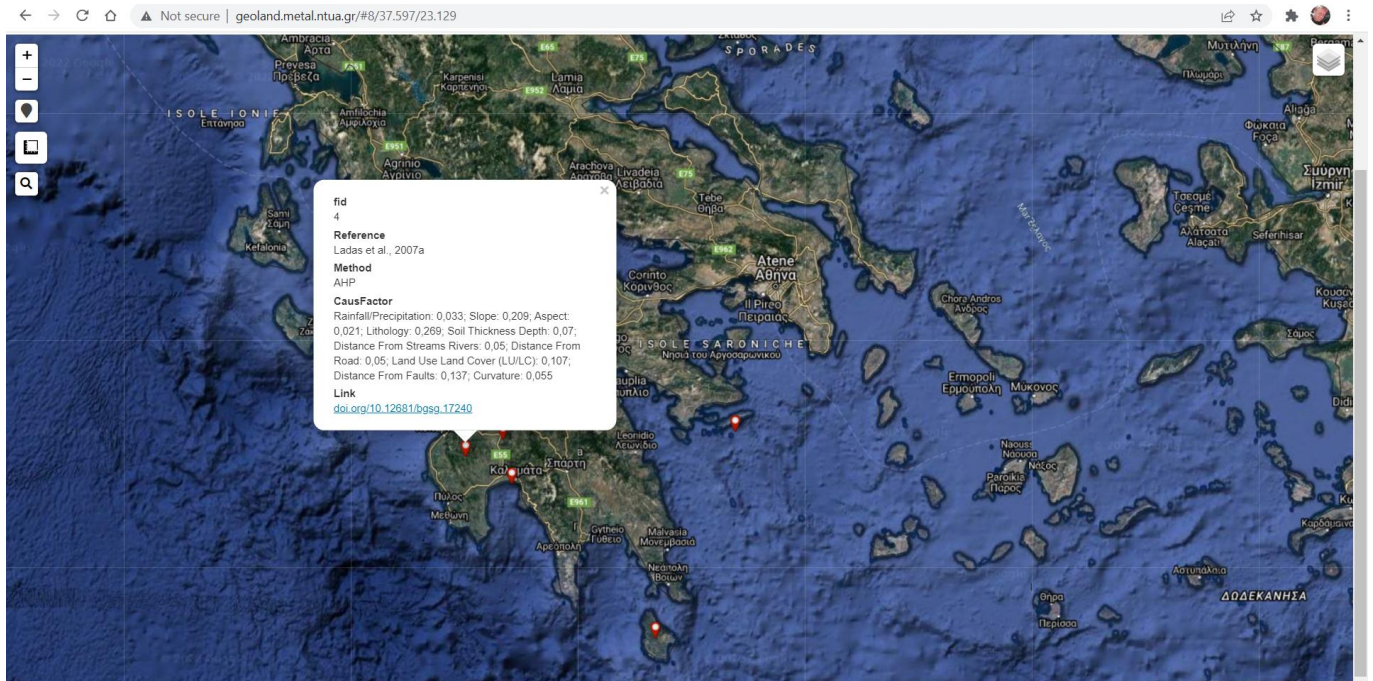
SM - Figure 13, Projecting the weight of the Geodatabase’s causal factor “Distance from faults” along with the open access external national geodatabase of Ganas et al. (2013).



SM - Figure 14, Spatial distribution of the research studies contained in the geodatabase along with the global landslide catalog (GLC) provided by USA-NASA open data portal, focused on America.



SM - Figure 15, General Overview of the Geoportall



SM - Figure 16, Presenting through the geoportall, the main results of a research study included in the geodatabase

TABLES

SM- Table 1, Scales for pair-wise comparisons Saaty, (1987)

Scales	Degree of preferences	Descriptions
1	Equally	Two activities contribute equally to the objective
3	Moderately	Experience and judgment slightly to moderately favor one activity over another
5	Strongly	Experience and judgment strongly or essentially favor one activity over another
7	Very strongly	An activity is strongly favored over another, and its dominance is showed in practice
9	Extremely	The evidence of favoring one activity over another is of the highest degree possible of an affirmation
2, 4, 6, 8,	Intermediate values	Used to represent compromises between the preferences in weights 1, 3, 5, 7 and 9

SM- Table 2, AHP – Judgements' matrix- Hypothetical Example developed by the authors for the needs of this study

Factor	Litho-logy	LU/LC	Road Network	Stream Network	Slope Angle	Relative Relief	Slope Aspect	Rain-fall
Litho-logy	1	1	1	1	2	2	2	2
LU/LC	1	1	1	1	1	1	1	1
Road Network	1	1	1	1	1	1	1	2
Stream Network	1	1	1	1	1	1	1	2
Slope Angle	1/2	1	1	1	1	2	2	2
Relative Relief	1/2	1	1	1	1/2	1	1	1
Slope Aspect	1/2	1	1	1	1/2	1	1	1
Rainfall	1/2	1	1/2	1/2	1/2	1	1	1
Total	6,00	8,00	7,50	7,50	7,50	10,00	10,00	12,00

SM- Table 3, AHP – Evaluating Weight - Hypothetical Example developed by the authors for the needs of this study

Factor	Lithology	LU/LC	Road Network	Stream Network	Slope Angle	Relative Relief	Slope Aspect	Rainfall	Total	Weight
Lithology	0,17	0,13	0,13	0,13	0,27	0,20	0,20	0,17	1,39	0,174
LU/LC	0,17	0,13	0,13	0,13	0,13	0,10	0,10	0,08	0,98	0,122
Road Network	0,17	0,13	0,13	0,13	0,13	0,10	0,10	0,17	1,06	0,132
Stream Network	0,17	0,13	0,13	0,13	0,13	0,10	0,10	0,17	1,06	0,132
Slope Angle	0,08	0,13	0,13	0,13	0,13	0,20	0,20	0,17	1,18	0,147
Relative Relief	0,08	0,13	0,13	0,13	0,07	0,10	0,10	0,08	0,83	0,103
Slope Aspect	0,08	0,13	0,13	0,13	0,07	0,10	0,10	0,08	0,83	0,103
Rainfall	0,08	0,13	0,07	0,07	0,07	0,10	0,10	0,08	0,69	0,086
Total	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	8,00	1,000

SM-Table 4, Sources of the Research Studies used in the Geodatabase

ID	Country	Region	Reference	Method	CR	Selected Causal Factors
1	Austria	Vorarlberg Eastern Alps	Ruff and Czurda (2008)	heuristic method (index method) - bivariate statistics	-	Slope, Aspect, NDVI, Distance from Faults, Erosion-Erodibility, Bedding, Lithology, Distance from Faults
2	Bulgaria	Simitli	Ivanova (2014)	AHP	<0,1	Slope, Aspect, Lithology, Distance from Streams/Rivers, Topographic Wetness Index (TWI), Stream Power Index (SPI), Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
3	Canada	British Columbia's Coast Mountains	Blais-Stevens et al. (2012)	Qualitative heuristic method - Fuzzy Logic	-	Slope, Aspect, Geomorphology, Soil Thickness, Distance from Drainage
4	Chile	Socoroma, Arica Parinacota	Rodriguez et al. (2013)	AHP	0,02	Slope, Altitude/Elevation, Aspect, Lithology, Distance from Drainage, Lineament, NDVI, Landslide Type
5	China	Anyuan County	Chen et al. (2019)	SWARA (Step-wise Weight Assessment Ratio Analysis)	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Soil Texture, Distance from Streams/Rivers, Topographic Wetness Index (TWI), Stream Power Index (SPI), Sediment Transport Index (STI), Land Use Land Cover (LU/LC), NDVI, Distance from Faults, Curvature

6		Zhen'an County, Shan'xi Province	Zhao et al. (2017)	Fuzzy-AHP	0,06	Rainfall/Precipitation, Slope, Slope Morphology, Altitude/Elevation, Relief Amplitude, Aspect, Lithology, Distance from Streams/Rivers
7		Zhangzha town Jiuzhaigou	Yi et al. (2019)	AHP - FR	0,017	Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Land Use Land Cover (LU/LC), NDVI, Distance from Faults, Seismic Acceleration/PGA
8	Cyprus	Western Cyprus	Myronidis et al. (2015)	AHP	0,00404	Rainfall/Precipitation, Slope, Slope Morphology, Altitude/Elevation, Aspect, Lithology, Geomorphology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC)
9	Ethiopia	Tarmaber District	Abay et al. (2019)	AHP -WLC	0,05	Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Land Use Land Cover (LU/LC), Distance from Faults
10	Greece	North Messinia	Ladas et al. (2007a)	AHP	0,07	Rainfall/Precipitation, Slope, Aspect, Lithology, Soil Thickness Depth, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults, Curvature
11		East Messinia	Ladas et al. (2007b)	AHP	0,07	Rainfall/Precipitation, Slope, Aspect, Lithology, Soil Thickness Depth, Distance from

					Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults, Curvature
12	Peloponnese	Chalkias et al. (2014)	Expert-Based Fuzzy Weighting Method	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Land Use Land Cover (LU/LC), Seismic Acceleration/PGA
13	Perfection Xanthi of	Tsangaratos and Rozos (2013)	AHP	0,0723	Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Distance from Faults, Distance to Geological Boundary
14	Perfection Xanthi of	Tsangaratos and Rozos (2013)	RES	-	Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Distance from Faults, Distance to Geological Boundary
15	North-eastern part of Achaia prefecture	Rozos et al. (2010)	AHP	0,03	Rainfall/Precipitation, Slope, Lithology, Land Use Land Cover (LU/LC), Distance from Faults, Geometry of main discontinuities
16	North-eastern part of Achaia prefecture	Rozos et al. (2011)	RES	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from

					Faults, Geometry of main discontinuities
17	Tsakona area, Arcadia	Tavoularis et al. (2015)	RES	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Distance from Streams/Rivers, Hydrology Surface Water Present, Distance from Roads, NDVI, Distance from Faults, Thickness of Weathering mantle
18	East Achaia prefecture	Rozos et al. (2010)	AHP	0,05	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults, Geometry of main discontinuities
19	East Achaia prefecture	Rozos et al. (2011)	RES	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults, Geometry of main discontinuities
20	North Peloponnese	Kavoura and Sabatakakis (2020)	Modified LSI	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Lithology, Land Use Land Cover (LU/LC)
21	West Crete Island	Kouli et al. (2014)	WLC	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from

						Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
22		Kithira island	Tavoularis and Kirkos (2019)	RES	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Geomorphology, Distance from Streams/Rivers, Hydrology Surface Water Present, Distance from Roads, Distance from Faults, Seismic Acceleration/PGA
23		Ydra island	Tavoularis and Kirkos (2019)	RES	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Geomorphology, Distance from Streams/Rivers, Hydrology Surface Water Present, Distance from Roads, Distance from Faults, Seismic Acceleration/PGA
24	India	West Bengal	Roy and Saha (2019)	Fuzzy-AHP	0,078	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Soil Texture, Distance from Streams/Rivers, Topographic Wetness Index (TWI), Lineament, Distance from Roads, Land Use Land Cover (LU/LC), NDVI
25		Maharashtra	Patil and Panhalkar (2019)	AHP	0,0318	Rainfall/Precipitation, Slope, Altitude/Elevation, Lithology, Geomorphology, Drainage Density, Lineament, Land Use Land Cover (LU/LC), NDVI,

					Distance from Faults
26	Coonoor and Ooty	Rahaman et al. (2014)	AHP	0,0068	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Soil Texture, Drainage Density, Lineament, Distance from Roads, Land Use Land Cover (LU/LC), NDVI
27	Tehri	Kumar and Anbalagan (2016)	AHP	0,067	Slope, Relief Amplitude, Aspect, Lithology, Soil Texture, Topographic Wetness Index (TWI), Stream Power Index (SPI), Drainage Density, Lineament, Distance from Roads, Land Use Land Cover (LU/LC), Reservoir Buffer, Curvature
28	southern Western Ghats, Kerala	Achu and Reghunath (2017)	AHP	<0,1	Rainfall/Precipitation, Slope, Slope Morphology, Relief Amplitude, Geomorphology, Soil Texture, Drainage Density, Distance from Roads, Land Use Land Cover (LU/LC)
29	Eastern Darjeeling Himalaya	Mandal and Mandal (2018)	AHP	0,035	Rainfall/Precipitation, Slope, Slope Curvature, Altitude/Elevation, Relief Amplitude, Aspect, Lithology, Geomorphology, Soil Texture, Topographic Wetness Index (TWI), Stream Power Index (SPI), Drainage Density, Distance from

					Drainage, Lineament, Distance from Roads, Land Use Land Cover (LU/LC), NDVI
30	Kottayam District, Kerala	Ajin et al. (2016)	Heuristic method (not exactly specified)	-	Slope, Altitude/Elevation, Lithology, Soil Thickness Depth, Drainage Density, Lineament, Distance from Roads, Land Use Land Cover (LU/LC)
31	Lachung Basin, Sikkim	Anbalagan et al. (2015)	Field Knowledge (not exactly specified)	-	Slope, Relief Amplitude, Lithology, Soil Texture, Drainage Density, Lineament, Land Use Land Cover (LU/LC)
32	Saitual Town, Mizoram	Lallianthanga and Lalbiakmawia (2013)	Field Knowledge (not exactly specified)	-	Slope, Altitude/Elevation, Lithology, Land Use Land Cover (LU/LC), Distance from Faults
33	Kolasib	Lallianthanga and Lalbiakmawia (2014)	Field Knowledge (not exactly specified)	-	Slope, Altitude/Elevation, Lithology, Land Use Land Cover (LU/LC), Distance from Faults
34	Aizawl city and Aibawk town	Laldintluanga et al. (2016)	Field Knowledge (not exactly specified)	-	Slope, Altitude/Elevation, Lithology, Land Use Land Cover (LU/LC), Distance from Faults
35	Wayanad	Jishnu et al. (2017)	WOA (-	Rainfall/Precipitation, Slope, Altitude/Elevation, Lithology, Soil Texture, Drainage Density, Lineament, Distance from Roads, Land Use Land Cover (LU/LC)
36	Aizawl City And Lengpui Airport	Laltlankima and Lalbiakmawia (2016)	AHP Weighted	-	Slope, Lithology, Geomorphology, Land Use Land

				Overlay Analysis)		Cover (LU/LC), Distance from Faults
37		Nadugani, Gudalur Taluk,	Saranathan and Mani (2016)	Multi-criterion analysis	-	Rainfall/Precipitation, Lithology, Geomorphology, Lineament, Lineament Intensity, Lineament Buffer
38		Shiv-Khola watershed, West Benghal	Mandal and Maiti (2011)	AHP	<0,1	Slope, Slope Curvature, Aspect, Lithology, Drainage Density, Distance from Roads, Land Use Land Cover (LU/LC), Upslope Contributing Area (UCA), Settlement Density
39	Indonesia	Yogyakarta	Xiong et al. (2018)	AHP	0,04	Rainfall/Precipitation, Slope, Lithology, Distance from Streams/Rivers, Land Use Land Cover (LU/LC), Distance from Faults
40		Kaligesing	Bachri and Shresta (2010)	AHP	0,090682	Slope, Lithology, Soil Texture, Landform Topographical Shape, Land Use Land Cover (LU/LC)
41	Iran	Khorramabad	Mokarram and Zarei (2018)	Fuzzy-AHP	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
42		Sari	Mijani and Neysani Samani (2017)	Fuzzy-AHP	0,05	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Distance from Streams/Rivers, Distance from

					Roads, Land Use Land Cover (LU/LC), NDVI
43	Lorestan province	Abedini and Tulabi, 2018	AHP	0,08	Rainfall/Precipitation, Slope, Relief Amplitude, Aspect, Lithology, Distance from Drainage, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
44	Golestan province north	Tazik et al. (2014)	Fuzzy-AHP	0,04	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
45	Mazandran Province	Arabameri et al. (2019)	AHP	0,036	Rainfall/Precipitation, Slope, Slope Length (LS), Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Stream Power Index (SPI), Drainage Density, Distance from Roads, Land Use Land Cover (LU/LC), NDVI, Distance from Faults, Convergence Index, Curvature
46	Mazandran Province	Arabameri et al. (2019)	LDA (Linear Discriminant Analysis)	-	Rainfall/Precipitation, Slope, Slope Length (LS), Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Stream Power Index (SPI), Drainage Density, Distance from Roads, Land Use

					Land Cover (LU/LC), NDVI, Distance from Faults, Convergence Index, Curvature
47	Mazandran Province	Arabameri et al. (2019)	AHP - SI (Statistical Index)	-	Rainfall/Precipitation, Slope, Slope Length (LS), Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Stream Power Index (SPI), Drainage Density, Distance from Roads, Land Use Land Cover (LU/LC), NDVI, Distance from Faults, Convergence Index, Curvature
48	Dena	Moradi et al. (2012)	AHP	-	Rainfall/Precipitation, Slope, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
49	Zanjan Province	Boroumandi et al. (2015)	AHP	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Drainage Density, Land Use Land Cover (LU/LC), Distance from Faults, Seismic Acceleration/PGA
50	Alborz	Moradi and Rezaei (2014)	AHP	0,07	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Land Use Land Cover (LU/LC), Distance from Faults, Curvature

51		Tehran metropolitan	Pourghasemi et al. (2013)	AHP	0,0676	Slope, Slope Length (LS), Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Stream Power Index (SPI), Distance from Roads, Land Use Land Cover (LU/LC), NDVI, Distance from Faults, Curvature
52		Kermanshah	Maleki et al. (2014)	AHP	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Lithology, Lineament, Land Use Land Cover (LU/LC)
53	Italy	Rupinaro catchment Liguria	Cignetti et al. (2019)	AHP	0,05	Slope, Aspect, Lithology, Land Use Land Cover (LU/LC)
54	Malaysia	Cameron Highlands	Shahabi and Hashim (2015)	AHP	0,049	Rainfall/Precipitation, Slope, Aspect, Lithology, Soil Texture, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), NDVI, Distance from Faults
55		Cameron Highlands	Shahabi and Hashim (2015)	SMCE (Spatial MultiCriteria Evaluation)	0,061	Rainfall/Precipitation, Slope, Aspect, Lithology, Soil Texture, Distance from Streams/Rivers, Distance from Drainage, Distance from Roads, Land Use Land Cover (LU/LC), NDVI, Distance from Faults
56		Sarawak, Borneo	Vijith and Dodge-Wan (2019)	AHP	< 0.00003	Slope, Slope Morphology, Relief Amplitude, Aspect, Soil Texture, Distance from

						Streams/Rivers, Topographic Wetness Index (TWI), Stream Power Index (SPI), Land Use Land Cover (LU/LC), Curvature
57		Penang Island	Khodadad and Jang (2015)	AHP	0,0146	Rainfall/Precipitation, Slope, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
58	Morocco	Oum Er Rbia high basin,	El Jazouli et al. (2019)	AHP -WLC	<0,1	Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
59		Oued Laou basin	Semlali et al. (2019)	AHP	0,0737	Slope, Aspect, Lithology, Distance from Streams/Rivers, Drainage Density, Distance from Roads, Land Use Land Cover (LU/LC), Distance from Faults
60		Safi	El Bchari et al. (2019)	AHP	0,053	Rainfall/Precipitation, Slope, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Fracturation
61	Nepal	Kaski district	Bhatt et al. (2013)	AHP	-	Slope, Aspect, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC)

62	North Macedonia	North Macedonia	Milevski et al. (2019)	AHP	0,02	Rainfall/Precipitation, Slope, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Curvature
63	North Macedonia	North Macedonia	Milevski et al. (2019)	FR	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC), Curvature
64	Pakistan	Karakoram Highway	Ali et al. (2019)	AHP-WLC	<0,1	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Distance from Streams/Rivers, Land Use Land Cover (LU/LC), Distance from Faults, Seismic Acceleration/PGA, Curvature
65	Papua New Guinea	Eastern highlands province	Jana et al. (2015)	Undefined	-	Rainfall/Precipitation, Slope, Altitude/Elevation, Lithology, Geomorphology, Soil Texture, Land Use Land Cover, Vegetation Proportion (VP)
65	Romania	Bârlad Plateau, East Romania	Grozavu et al. (2017)	AHP	0,01	Slope, Altitude/Elevation, Aspect, Lithology, Land Use Land Cover (LU/LC)
66	Rwanda	Karongi	Nahayo et al. (2019)	AHP	0,014	Rainfall/Precipitation, Slope, Altitude/Elevation, Lithology, Soil Texture, Distance from Roads, Land Use Land Cover (LU/LC), NDVI

67		Jeju Island	Quan and Lee (2012)	AHP	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Soil Texture, Land Use Land Cover (LU/LC), NDVI
68	S. Korea	South Korea (national scale)	Kil et al. (2016)	AHP	<0,1	Rainfall/Precipitation, Slope, Slope Morphology, Slope Length (LS), Altitude/Elevation, Aspect, Geomorphology, Soil Texture, Soil Hardness, Soil Thickness Depth, Soil acidity, Salt concentration, Porosity, Organic matter, Tensile strength, Permeability coefficient, Hydrology Surface Water Present, Drainage Density, Elapsed year since revegetation, Vegetation Proportion (VP), Vegetation Community, Number of Trees, Number of Herbs
69	Saudi Arabia	Abha Watershed	Mallick et al. (2018)	Fuzzy-AHP	<0,08	Rainfall/Precipitation, Slope, Aspect, Lithology, Geomorphology, Distance from Drainage, Lineament, Distance from Roads, Land Use Land Cover (LU/LC), Erosion-Erodibility, Vegetation Proportion (VP)
70	Serbia	Fruška mountain gora	Marjanović et al. (2013)	AHP	<0,1	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, NDVI, Erosion-Erodibility

71		Ljubovija Municipality western Serbia	Krušić et al. (2017)	AHP	0,045	Slope, Altitude/Elevation, Aspect, Geomorphology, Distance from Streams/Rivers, Distance from Hydrological borders, Land Use Land Cover (LU/LC), Erosion-Erodibility
72	Slovenia	Sava and Sora River	Komac (2006)	Fuzzy-AHP	<0,1	Slope, Lithology, Soil Texture, Distance from Streams/Rivers, Land Use Land Cover (LU/LC), Distance from Faults, Cover type Diversity, Lithology Diversity, Curvature
73		Slovenia (national scale)	Komac and Zorn (2009)	WOE (Weight Of Evidence)	-	Rainfall/Precipitation, Slope, Aspect, Lithology, Land Use Land Cover (LU/LC), Curvature
74	Spain	Tirajana, Gran Canaria	Hervas de Diego et al. (2001)	AHP	0,02	Slope, Lithology, Land Use Land Cover (LU/LC), Distance from Faults, Reservoir Buffer, Landslide Activity
75	Sri Lanka	Kegalle District	Perera et al. (2018)	SMCE (Spatial Multi Criteria Evaluation)	0,074	Rainfall/Precipitation, Slope, Aspect, Lithology, Soil Texture, Distance from Streams/Rivers, Distance from Roads, Land Use Land Cover (LU/LC)
76	Taiwan	Chen-Yu-Lan Watershed	Nguyen and Liu (2019)	AHP	<0,1	Slope, Aspect, Lithology, Drainage Density, Land Use Land Cover (LU/LC)
77	Thailand	Mae Chem , Northern Thailand	Intarawichian and Dasananda (2010)	AHP-WLC	0,068	Rainfall/Precipitation, Slope, Altitude/Elevation, Aspect, Lithology, Soil Texture, Drainage Density, Lineament, Land

						Use Land Cover (LU/LC), NDVI
78	Turkey	Western Black Sea region, Abdipaşa, Abdipaşa/Ulus/Bar tın	Ercanoglu et al. (2008)	AHP	0,06	Slope, Altitude/Elevation, Aspect, Landform Topographical Shape, Topographic Wetness Index (TWI), NDVI
79		Ayvalik	Akgun et al. (2011)	AHP	0,04	Rainfall/Precipitation, Slope, Aspect, Lithology, Topographic Wetness Index (TWI), Stream Power Index (SPI), Drainage Density, Lineament, Land Use Land Cover (LU/LC), NDVI
80	USA	Idaho, Salmon - Challis	Sprague- Wheeler (2003)	Undefined	-	Slope, Aspect, Lithology, Soil Texture, Hydrology Surface Water Present, Burn Severity
81		Rocky Mountains in north central Idaho	Gorsevski et al. (2006)	Fuzzy-AHP	0,01	Slope, Slope Curvature, Altitude/Elevation, Topographic Wetness Index (TWI), Curvature, Solar Radiation

where AHP: Analytic Hierarchy Process, LDA: linear discriminant analysis, LSI: landslide susceptibility index, SI: statistical index, SMCE: spatial multicriteria evaluation, SWARA: stepwise weight assessment ratio analysis, WOA: weighted overlay analysis, and WLC: weight linear combination.