

## *Supplementary Material*

# **Assessing the recent trends of land degradation and desertification in Romania using remote sensing indicators.**

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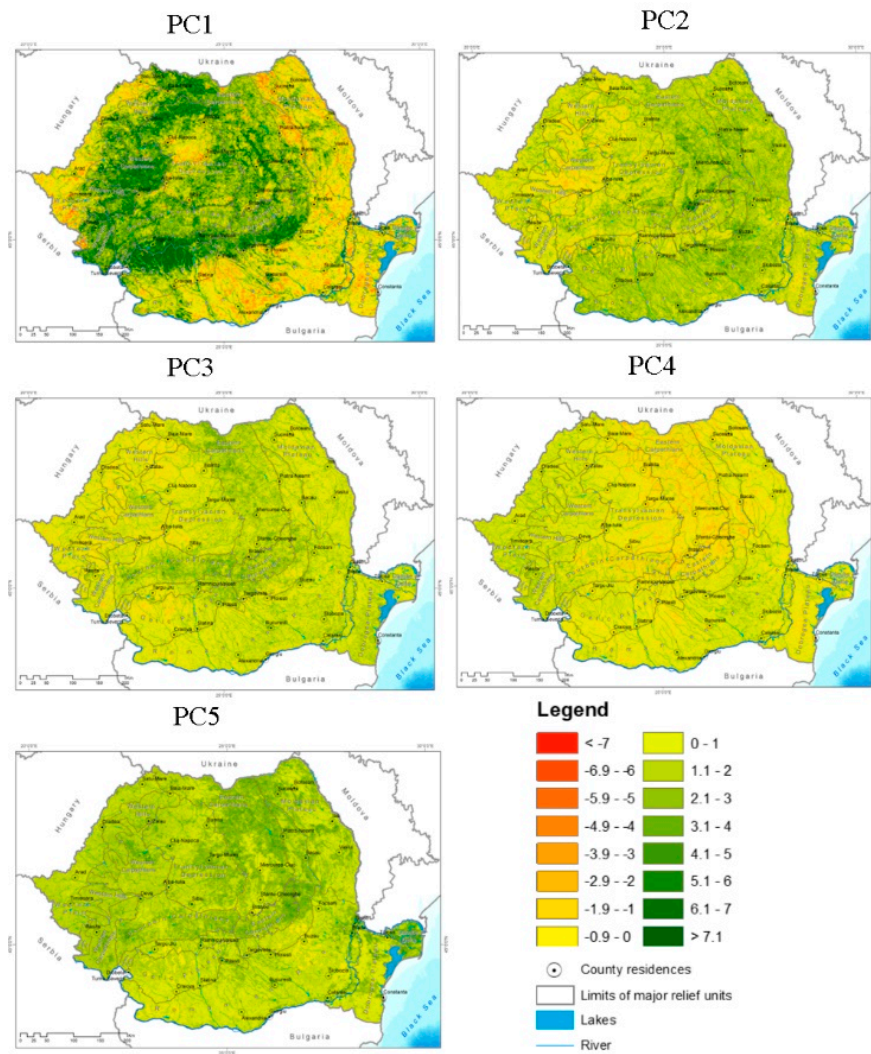


Figure S1: The spatial distribution of the values of the principal components.

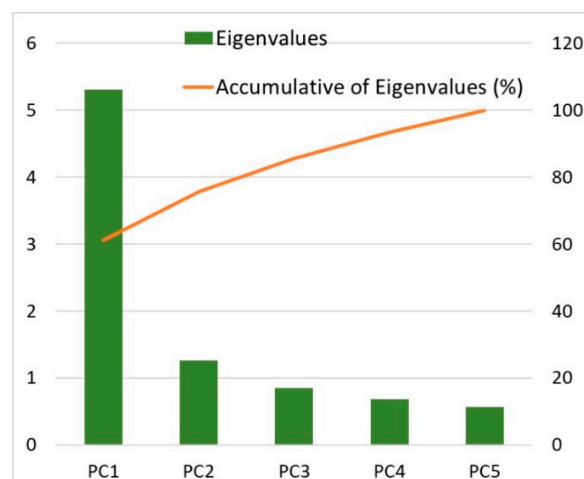


Figure S2: The percentage of the accumulation of eigenvalues captured by the principal components.

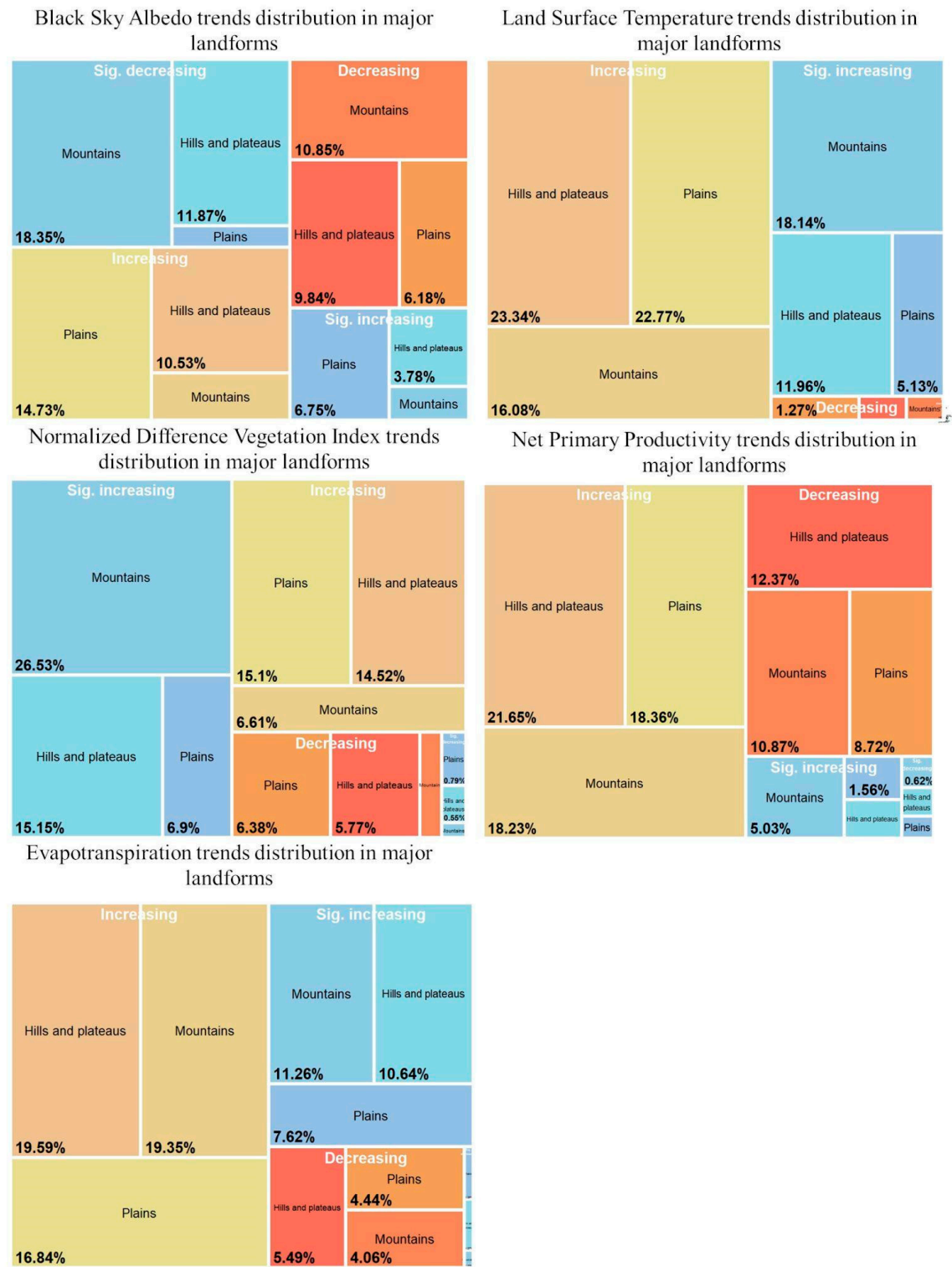
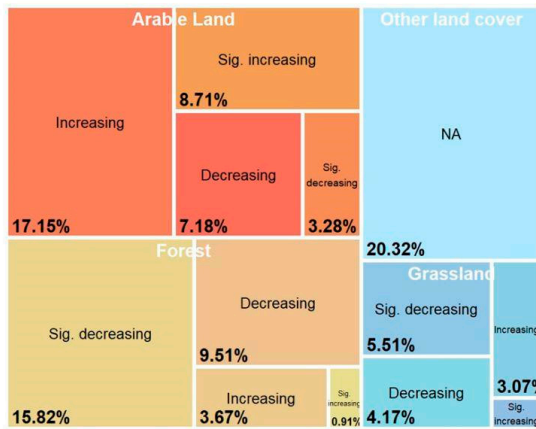
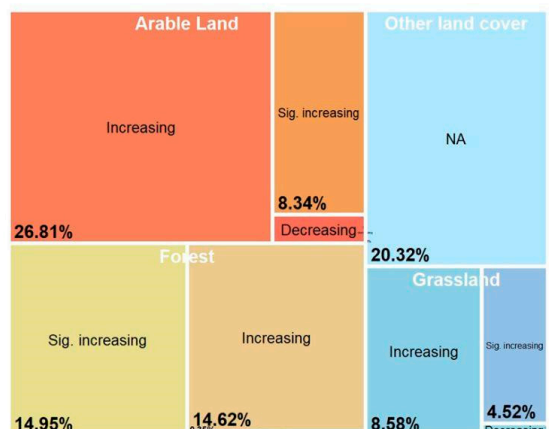


Figure S3: The percentage of the distribution of trend classes in major landforms compared to the total surface of Romania.

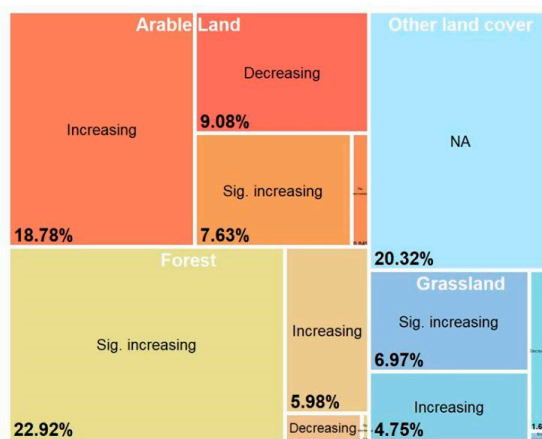
Black Sky Albedo trends distribution in main land cover



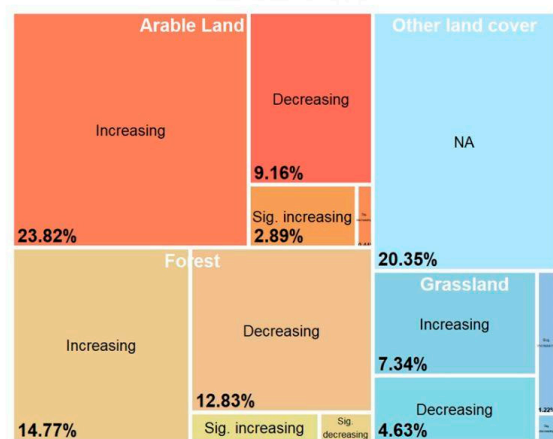
Land Surface Temperature trends distribution in main land cover



Normalized Difference Vegetation Index trends distribution in main land cover



Net Primary Productivity trends distribution in main land cover



Evapotranspiration trends distribution in main land cover

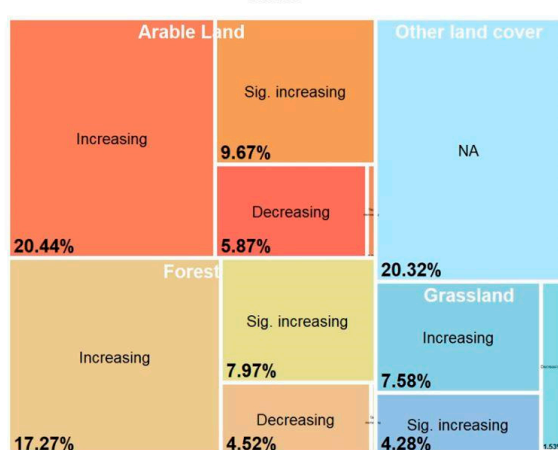


Figure S4: The percentage of the distribution of trend classes in main land cover compared to the total surface of Romania.

Table S1: Total surfaces (%) with land degradation (LD), stable lands (S), and total improvement surfaces (I) at the level of major landforms and main types of land use.

Major landforms	Arable land (%)			Forest (%)			Grassland (%)		
	<i>LD</i>	<i>S</i>	<i>I</i>	<i>LD</i>	<i>S</i>	<i>I</i>	<i>LD</i>	<i>S</i>	<i>I</i>
Eastern Carpathians	2.65	23.25	74.10	1.14	11.62	87.24	0.63	8.03	91.34
Curvature Carpathians	0	1.62	98.38	0.96	14.99	84.05	0.07	4.54	95.39
Southern Carpathians	9.55	28.70	61.75	0.88	11.20	87.92	1.01	6.08	92.91
Banat Carpathians	0.06	0.86	99.08	0.11	2.50	97.39	0.27	2.73	97.00
Sub-Carpathian	21.91	34.91	43.17	0.63	7.14	92.24	3.32	11.71	84.97
Western Carpathians	1.43	7.16	91.41	0.49	3.94	95.57	0.15	1.88	97.97
Transylvanian	9.05	32.97	57.98	0.85	5.70	93.45	5.42	19.57	75.00
Depression									
Crisana Hills	5.88	23.56	70.56	1.29	10.83	87.89	4.57	19.62	75.81
Banat Hills	22.39	16.07	61.54	1.17	3.79	95.04	3.83	8.58	87.58
Mehedinti Plateau	1.63	2.44	95.93	0.00	0.54	99.46	0.00	3.38	96.62
Getic Plateau	6.38	33.58	60.05	0.50	5.74	93.76	0.79	13.12	86.09
Moldavian Plateau	18.37	63.21	18.42	3.37	28.81	67.82	12.67	60.98	26.35
Western Plain	21.23	56.63	22.14	4.38	30.23	65.39	17.61	55.24	27.15
Romanian Plain	14.79	63.13	22.09	4.34	33.70	61.96	5.58	47.73	46.69
Dobrogea Plateau	15.95	68.39	15.66	1.65	39.59	58.76	14.52	56.91	28.58
Danube Delta	35.41	47.62	16.97	10.42	32.39	57.18	11.11	60.34	28.54

Table S2: Total surfaces (km<sup>2</sup>) with land degradation (LD), stable lands (S), and total improvement surfaces (I) at the level of major landforms and main types of land use.

Major landforms	Arable land (km <sup>2</sup> )			Forest (km <sup>2</sup> )			Grassland (km <sup>2</sup> )		
	<i>LD</i>	<i>S</i>	<i>I</i>	<i>LD</i>	<i>S</i>	<i>I</i>	<i>LD</i>	<i>S</i>	<i>I</i>
Eastern Carpathians	64.57	566.76	1796.53	187.33	1905.96	14332.94	29.09	372.89	4222.14
Curvature Carpathians	0	0.87	53.08	44.86	701.88	3940.16	0.52	34.82	732.23
Southern Carpathians	52.03	156.58	337.50	83.38	1059.71	8321.13	21.28	128.89	1975.32
Banat Carpathians	0.17	2.46	285.08	5.47	123.19	4810.01	2.63	26.25	934.01
Sub-Carpathian	646.87	1034.79	1301.15	36.27	413.07	5409.04	83.30	295.35	2 182.0
Western Carpathians	2.06	10.32	132.25	33.87	274.19	6658.77	2.75	34.97	1820.16
Transylvanian	626.28	2281.41	4012.57	49.68	333.73	5454.71	353.62	1277.54	4884.39
Depression									
Crisana Hills	163.10	652.51	1959.24	30.10	253.73	2063.55	59.99	257.86	998.17
Banat Hills	262.97	187.66	715.59	19.44	62.88	1576.18	32.86	73.47	746.97
Mehedinti Plateau	0.35	0.53	20.97	0	2.30	422.0	0	7.43	212.53
Getic Plateau	295.58	1559.17	2781.68	22.21	257.93	4194.07	9.60	159.87	1044.58
Moldavian Plateau	2080.56	7181.15	2093.96	115.30	989.71	2321.32	395.19	1907.11	825.67
Western Plain	2458.86	6536.96	2554.39	29.21	201.37	435.25	331.58	1040.93	512.40



Romanian Plain	5092.80	21735.55	7610.66	127.84	991.92	1824.41	153.93	1320.86	1295.98
Dobrogea Plateau	1072.53	4592.22	1049.41	16.55	395.86	587.56	147.65	578.14	290.15
Danube Delta	217.27	292.45	104.26	19.55	60.85	107.40	20.53	111.30	52.64

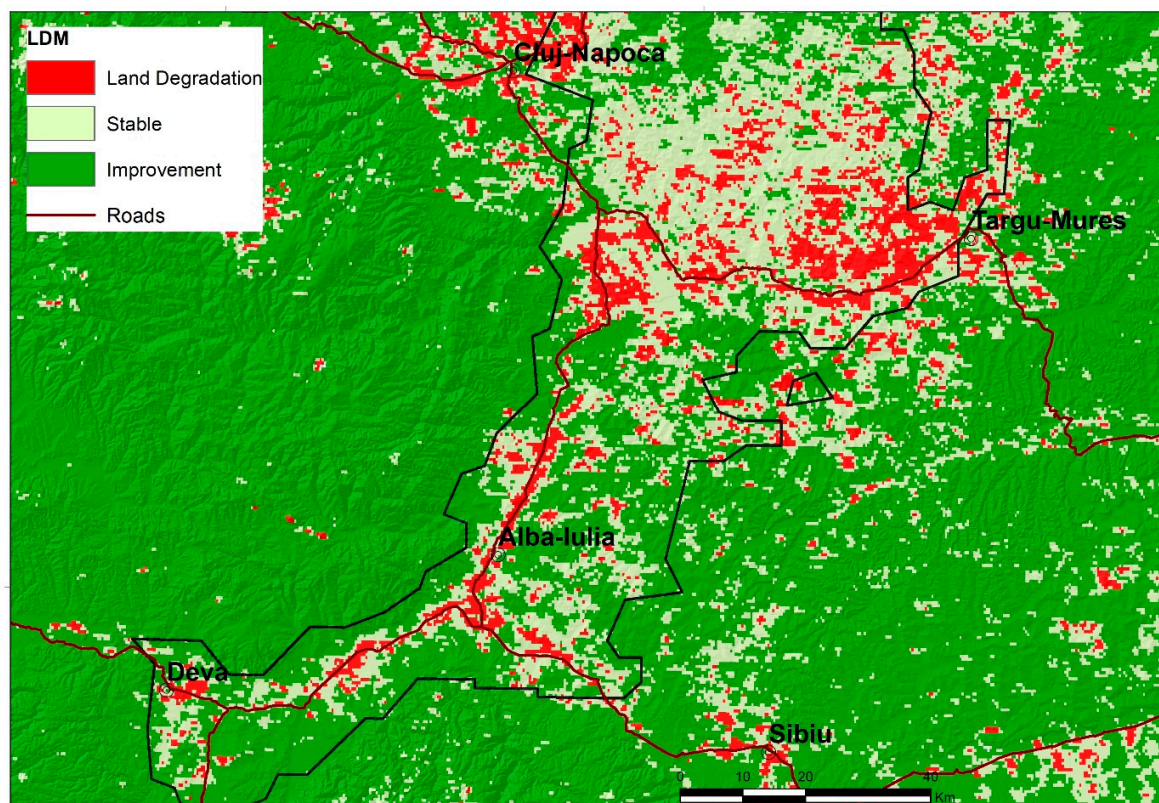


Figure S5: Spatial distribution of land degradation in the Deva, Alba-Iulia, Cluj-Napoca, and Targu-Mures areas.