

Ambio

Electronic Supplementary Material

This supplementary material has not been peer reviewed.

Title: **Why European biodiversity reporting is not reliable**

Jana-Sophie Ette, Thomas Geburek

country	Socioeconomics					Geography						
	population [2017]	pop. density*	GDP per capita [2016/USD]	EU accession	size [km2]	biogeographical regions	mean latitude	land border length [km]	coast boarder length [km]	isolation**	forest area [%]	agricultural area [%]
Albania	2930187	101.9	11840	not member	28748	ALP, MED	41 00 N	720	362	0.67	28.2	42.9
Andorra	76965	164.5	37231	not member	468	ALP	42 30 N	120	0	1.00	34.0	40.0
Austria	8823054	105.2	48005	1995	83879	ALP, CON	47 20 N	2562	0	1.00	46.9	32.9
Belgium	11429336	351.2	45047	1958	32545	ALP, CON	50 50 N	1385	67	0.95	22.6	43.9
Bosnia	3507017	68.6	10958	not member	51129	ALP, MED, CON	44 00 N	1459	20	0.99	42.7	42.6
Bulgaria	7084571	63.8	20327	2007	110994	ALP, BLS	43 00 N	1808	354	0.84	35.2	46.2
Croatia	4189353	74.1	22795	2013	56542	ALP, MED	45 10 N	2197	5835	0.27	34.3	27.5
Cyprus	854802	92.4	21300	2004	9251	MED	35 00 N	152	648	0.19	18.7	13.8
Czech Republic	10618303	134.6	33232	2004	78866	CON, PAN	49 45 N	1881	0	1.00	34.5	54.6
Denmark	5733551	133.2	47985	1973	43048	ATL, CON	56 00 N	68	7314	0.01	14.6	62.2
Estonia	1309632	29.0	29313	2004	45227	BOR	59 00 N	633	3794	0.14	52.7	23.4
Finland	5523231	16.3	32165	1995	338144	ALP, BOR	64 00 N	2690	1250	0.68	73.1	7.5
France	64979548	119.5	42314	1958	543965	ALP, ATL, CON, MED	46 00 N	2889	3427	0.46	31.0	52.5
Germany	82114224	229.9	48111	1958	357121	AL, ATL, CON	51 00 N	3621	2389	0.60	32.7	48.0
Greece	11159773	84.6	26669	1981	131957	MED	39 00 N	1228	13676	0.08	31.5	60.4
Hungary	9721559	104.5	27482	2004	93030	PAN	47 00 N	2171	0	1.00	22.9	59.1
Ireland	4761657	67.8	69231	1973	70273	ATL	53 00 N	499	1448	0.26	10.9	64.3
Italy	59359900	197.0	36833	1958	301336	ALP, CON, MED	42 50 N	1932	7600	0.20	31.6	44.0
Latvia	1949670	30.2	25710	2004	64589	BOR	57 00 N	1150	498	0.70	54.0	30.3
Liechtenstein	37922	237.0	168146	not member	160	CON	47 10 N	76	0	1.00	43.1	32.3
Lithuania	2890297	44.3	29972	2004	65301	BOR	56 00 N	1273	90	0.93	34.8	48.0
Luxembourg	583445	225.6	104003	1958	2586	CON	49 45 N	359	0	1.00	33.5	50.7
Macedonia	2083160	81.0	14579	not member	25713	CON, ALP	41 50 N	766	0	1.00	39.6	50.1
Malta	430835	1363.4	39834	2004	316	MED	35 50 N	0	197	0.00	1.1	32.0
Moldava	4051212	119.9	5328	not member	33800	CON, STE	47 00 N	1389	0	1.00	12.4	74.8
Monaco	38695	19155.9	162009	not member	2.02	MED	43 44 N	4.4	4.1	0.52	0.0	0.0
Montenegro	628960	45.5	16643	not member	13812	ALP, MED	42 30 N	625	294	0.68	61.5	17.2
Norway	5305383	16.4	69249	not member	323759	ALP, ATL, AR	62 00 N	2551	25148	0.09	33.2	2.7
Poland	38170712	122.1	27764	2004	312685	ALP, CON	52 00 N	2788	440	0.86	30.8	46.9
Portugal	10329506	111.9	28933	1986	92345	ATL, MAC, MED	39 30 N	1214	1793	0.40	34.7	40.4
Romania	19679306	82.6	22348	2007	238391	ALP, BLS, CON, PAN, STE	46 00 N	2508	225	0.92	29.8	60.1
San Marino	33400	547.5	59058	not member	61	CON	43 46 N	39	0	1.00	0.0	16.7
Serbia	7058322	79.6	14493	not member	88631	ALP, CON, PAN	44 00 N	2027	0	1.00	31.1	39.7
Slovakia	5447662	111.1	31339	2004	49034	ALP, PAN	48 40 N	1524	0	1.00	40.3	40.0
Slovenia	2079976	102.7	32085	2004	20253	ALP, CON	46 00 N	1334	47	0.97	62.0	30.0
Spain	46354321	91.9	36416	1986	504654	ALP, ATL, MAC, MED	40 00 N	1918	4964	0.28	38.2	52.5
Sweden	9910701	22.0	49836	1995	449964	ALP, BOR, CON	62 00 N	2233	3218	0.41	68.9	7.5
Switzerland	8476005	205.3	59561	not member	41285	ALP, CON	47 00 N	1852	0	1.00	31.7	38.2
The Netherlands	17035938	410.2	51949	1958	41526	ATL	52 30 N	1027	451	0.69	11.2	54.5
Turkey	9799745	419.1	24912	not member	23384	BLS, ANA, MED	39 00 N	2648	7200	0.27	27.2	50.1
U.K.	66181585	272.5	42481	1973	242910	ATL, MED	51 30 N	499	12429	0.04	13.0	70.8
Ukraine	44222947	73.3	8305	not member	603700	ALP, CON, STE	49 00 N	4663	2782	1.60	16.7	71.3

* annotation: pop.density = population/size

**annotation: isolation= coast boarder length/ whole border length

Sources of information:

country size:	https://de.wikipedia.org/wiki/Liste_der_L%C3%A4nder_Europas
forest area:	https://de.wikipedia.org/wiki/Liste_der_L%C3%A4nder_nach_Waldfl%C3%A4che
population size:	https://de.wikipedia.org/wiki/Liste_der_L%C3%A4nder_Europas
GDP:	https://de.wikipedia.org/wiki/Liste_der_L%C3%A4nder_Europas_(status:_2016)
EU accession:	https://www.google.com/publicdata/explore?ds=d5bncppjof8f9_&met_y=ny_gdp_pcip_cd&hl=de&dl=de (status: Andorra 2016, Liechtenstein 2015, Monaco 2011)
EU accession:	https://de.wikipedia.org/wiki/Mitgliedstaaten_der_Europ%C3%A4ischen_Union
coast line:	https://de.wikipedia.org/wiki/Liste_der_L%C3%A4nder_nach_K%C3%BCstl%C3%A4nge
agricultural area:	https://de.wikipedia.org/wiki/Liste_der_L%C3%A4nder_nach_Landwirtschaftlicher_Nutzfl%C3%A4che
boarder length:	https://en.wikipedia.org/wiki/List_of_countries_and_territories_by_land_borders
coordinates:	https://www.cia.gov/library/publications/resources/the-world-factbook/geos/au.html
biogeographical regions:	https://de.wikipedia.org/wiki/Biogeographische_Regionen_der_Europ%C3%A4ischen_Union

Appendix S1. Socio economic and geographic country characteristics to test the hypotheses and sources of information attached.

Appendix S2/1. Binary coded analysis outcome for ecosystem diversity indicator choice in the European national CBD reports.

1. Ecosystem indicators																		
country	1a) land use			1b) forest structure					1c) nature protection			1d) human pressure						
	forestral	agricultural	urban	deadwood	old stands	forest communities	regeneration	glades	FFH status	protected area	protection activities	environm. load	hunting/fishery	wood removal	fragmentation	waste	awareness	
Albania	1	1			1					1	1							
Andorra			1							1	1	1						
Austria	1	1	1			1			1	1	1	1	1		1	1	1	
Belgium	1								1	1	1				1		1	
Bosnia	1									1	1					1	1	
Bulgaria	1	1	1			1	1			1	1	1	1			1		
Croatia	1	1	1			1				1	1	1	1				1	
Cyprus	1					1			1	1	1							
Czech Republic	1	1	1			1	1		1	1	1	1	1	1				
Denmark	1	1	1			1			1	1	1	1	1					
Estonia	1	1				1			1	1	1	1	1	1	1	1		
Finland	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	
France	1	1	1	1		1			1	1	1	1	1		1	1	1	
Germany	1	1	1	1		1	1		1	1	1	1	1		1		1	
Greece	1	1	1			1			1	1	1				1	1	1	
Hungary	1	1	1	1		1			1	1	1	1	1		1		1	
Ireland	1	1	1			1	1		1	1	1	1	1	1	1	1	1	
Italy	1	1	1						1	1	1	1	1	1				
Latvia	1	1			1				1	1	1							
Liechtenstein	1	1	1	1	1		1	1	1	1	1	1	1			1		
Lithuania	1	1	1			1			1	1	1	1	1	1		1	1	
Luxembourg			1						1	1	1	1			1			
Macedonia	1	1				1				1	1				1			
Malta	1	1	1			1			1	1	1	1				1	1	
Moldava		1								1			1	1				
Monaco	1		1							1	1		1			1		
Montenegro	1									1		1	1		1			
Norway	1	1	1			1				1	1	1	1				1	
Poland	1	1	1	1	1	1			1	1	1	1	1		1	1	1	
Portugal	1					1			1	1	1				1			
Romania	1	1	1						1	1	1	1				1		
San Marino	1	1	1							1	1		1		1			
Serbia	1	1	1	1		1	1			1	1	1	1		1	1		
Slovakia	1	1	1		1	1	1		1	1	1	1			1	1		
Slovenia	1		1						1	1	1	1			1	1	1	
Spain			1						1	1	1	1						
Sweden	1		1	1	1	1			1	1	1			1				
Switzerland	1	1	1	1		1	1		1	1	1	1	1	1			1	
The Netherlands	1	1							1	1	1	1	1	1	1	1	1	
Turkey	1	1				1				1								
United Kingdom							1		1	1	1	1	1		1	1	1	
Ukraine	1	1	1			1	1		1	1	1	1	1	1	1	1	1	
Sum	37	31	29	8	7	25	10	2	27	41	39	28	24	16	22	19	18	

Appendix S2/2. Binary coded analysis outcome for species diversity indicator choice in the European national CBD reports.

2. Species indicators																
country	2a) aquatic species			2b) semiaquatic-terrestrial species						2c) terrestrial flora			2d) species of particular interest			
	benthos	fish	plants	amphib./reptiles	mammals	invertebrates	protozoa	fungi	birds	butterflies	lichens	moss	vascular plants	exotics	endemics	red listed
Albania		1		1	1	1			1				1		1	1
Andorra																
Austria	1							1	1				1	1		
Belgium		1	1	1	1	1			1	1			1	1		1
Bosnia		1		1	1	1			1				1	1		1
Bulgaria	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1
Croatia	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
Cyprus		1		1	1				1				1		1	
Czech Republic		1		1	1	1	1	1	1	1	1	1	1	1		
Denmark		1	1	1	1	1		1	1	1	1		1	1		1
Estonia	1	1	1		1	1			1				1	1		
Finland	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
France		1		1	1	1		1	1	1	1		1	1	1	1
Germany		1				1			1			1	1	1	1	1
Greece	1	1	1	1	1	1		1	1	1			1	1	1	1
Hungary		1						1	1		1		1	1	1	1
Ireland		1	1	1	1	1		1	1	1	1	1	1	1	1	1
Italy		1	1	1	1	1	1	1	1	1	1	1	1	1		1
Latvia		1	1	1	1	1		1	1		1	1	1	1		
Liechtenstein	1	1	1	1	1	1		1	1				1	1		1
Lithuania		1	1	1	1	1		1	1		1	1	1	1		1
Luxembourg		1		1	1				1	1			1			1
Macedonia		1	1	1	1	1		1	1	1			1		1	
Malta	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1
Moldava		1	1	1	1	1		1		1	1		1		1	
Monaco	1	1	1	1		1			1				1	1	1	1
Montenegro		1	1	1	1	1		1	1		1		1			
Norway	1	1	1	1	1	1		1	1		1	1	1	1		1
Poland		1	1	1	1	1		1	1		1	1	1	1		1
Portugal		1		1	1	1			1		1	1	1	1	1	1
Romania	1	1	1	1	1	1			1		1	1	1	1		1
San Marino		1		1	1				1				1		1	1
Serbia	1	1	1	1	1	1		1	1		1	1	1			
Slovakia		1	1	1	1	1	1		1	1	1		1			1
Slovenia		1		1	1	1			1	1				1	1	
Spain	1	1	1	1	1	1		1	1			1	1	1	1	1
Sweden														1		1
Switzerland		1	1	1	1	1		1	1	1	1	1	1	1	1	1
The Netherlands		1	1		1	1			1	1			1	1	1	1
Turkey	1	1		1	1	1			1				1		1	1
United Kingdom	1	1	1	1	1			1	1	1	1	1	1	1	1	1
Ukraine			1		1				1		1	1	1	1		1
Sum	15	38	27	35	36	32	4	23	38	17	24	23	39	32	23	30

Appendix S2/3. Binary-coded analysis outcome for genetic diversity indicator choice in the European national CBD reports.

country	3. Genetic indicators											
	3a) domesticated plants		3b) wild plants					3c) domesticated animals		3d) wild animals		
	in-situ	ex-situ	in-situ	ex-situ	game impact	genetic reserve	forests	in-situ	ex-situ	in-situ	ex-situ	
Albania											1	
Andorra												
Austria		1	1	1	1	1	1				1	
Belgium	1	1						1	1			
Bosnia		1		1							1	
Bulgaria	1	1	1	1	1		1	1	1			1
Croatia			1	1			1	1	1		1	1
Cyprus		1	1							1		
Czech Republic		1	1	1	1	1		1	1	1	1	1
Denmark	1	1	1	1			1	1	1			
Estonia	1	1						1			1	1
Finland	1	1	1	1				1	1	1	1	1
France	1	1		1				1	1	1		1
Germany	1	1	1	1				1	1	1	1	
Greece	1	1	1	1			1	1	1	1	1	1
Hungary	1	1	1	1				1	1	1		
Ireland			1	1				1			1	1
Italy			1					1			1	
Latvia	1	1	1	1				1			1	1
Liechtenstein	1	1	1	1	1						1	
Lithuania		1	1	1			1	1	1	1	1	1
Luxembourg	1										1	
Macedonia				1						1	1	1
Malta	1		1					1		1	1	
Moldava												
Monaco			1									
Montenegro												
Norway		1	1	1				1			1	1
Poland	1	1	1	1			1	1	1		1	
Portugal	1	1	1	1							1	1
Romania		1						1			1	
San Marino												
Serbia	1	1	1								1	1
Slovakia	1	1	1	1							1	1
Slovenia											1	
Spain	1	1		1			1	1		1		1
Sweden	1	1	1	1			1	1			1	
Switzerland	1	1		1	1		1	1	1	1	1	1
The Netherlands	1	1						1				
Turkey	1	1	1	1			1	1			1	
United Kingdom		1	1	1				1			1	
Ukraine		1	1	1			1	1			1	1
Sum	22	29	26	26	5		12	26	16	29	19	