Perception-based study on the value of nature to people and land sparing for nature in Brazil and Poland

Agnieszka E Latawiec[1,2,3,4], Rodrigo Penna-Firme[1], Ingrid AB Pena[1,2*], Bernardo BN Strassburg[1,2,5], Adam Drosik[6], Maciej Kubon[3,11], Hubert Latala[3], Katarzyna Grotkiewicz[3], Krzysztof Kubon[7,10], Pedro Teixeira[8], Lucas Rodrigues[9], Alvaro Iribarrem[2], Stanislaw Famielec[3], Dominika Springer[6] Isabella L Lucas[2]

[1] Department of Geography and Environment, Pontifical Catholic University of Rio de Janeiro, 22453900, Rio de Janeiro, Brazil.
[2] International Institute for Sustainability, Estrada Dona Castorina 124, 22460-320, Rio de Janeiro, Brazil
[3] Department of Production Engineering, Logistics and Applied Computer Science, Faculty of Production and Power Engineering, Agricultural University Kraków, ul. Balicka 116b 30-149 Kraków, Poland
[4] School of Environmental Sciences, University of East Anglia, Norwich NR4 7TJ, United Kingdom
[5] Programa de Pós Graduacão em Ecologia, Universidade Federal do Rio de Janeiro, 21941-590, Rio de Janeiro, Brazil
[6] Institute of Political Science and Administration, Opole University, pl. Kopernika 11a, 45-040 Opole, Poland
[7] Association Project Tarnów, Rynek 9, 33-100 Tarnów, Poland
[8] Department of Education, Pontifical Catholic University of Rio de Janeiro, 22453900, Rio de Janeiro, Brazil
[9] Department of Earth System Sciences, University of California Irvine, 3200 Croul Hall St, Irvine, CA 92697, United States
[10] Institute of Political Science and International Relations, Jagiellonian University in Krakow, ul. Jabłonowskich 5, 31-114 Krakow, Poland
[11] Eastern European State College of Higher Education in Przemyśl, Książąt Lubomirskich 6, 37-700 Przemyśl, Poland

Supplementary Material

Table S1: Percentage of respondents in relation to Polish cities.

Cities	N	%
Opole	42	13,0
Kraków	93	28,9
Olsztyn	39	12,1
Tarnów	148	46,0
Total	322	100,0

Method S1: Questions of the survey in Portuguese and in Polish.

Questions of the survey – Portuguese version

1 - Após séculos de desmatamento, a humanidade domina hoje aproximadamente 40% da superfície terrestre do planeta. Do que ainda resta de natureza, o quanto você acha que deveria ser conservado?

Opções de resposta (resposta única): Tudo (100%); A maior parte (75%); Metade (50%); Um quarto (25%); Um décimo (10%); Nada (0%)

2 - Indique o grau de importância e urgência na resolução dos problemas ambientais listados: poluição do ar, poluição dos mares, poluição dos rios, desmatamento de florestas, mudanças climáticas, falta de água, falta de saneamento, extinção de espécies, uso de agrotóxicos, erosão dos solos.

Opções de resposta (resposta única para cada problema ambiental): Baixa; Média; Alta

3 - Indique até que ponto você concorda com as seguintes afirmações:

a) A natureza, suas plantas e animais têm valor em si próprios, independentemente de serem úteis para nós.

b) A natureza tem valor só porque gera benefícios para a humanidade.

Opções de resposta (resposta única para cada afirmação): Concordo muito; Concordo um pouco; Discordo um pouco; Discordo totalmente; Não sei dizer.

4- Questões sobre o perfil dos participantes:

Qual a sua idade

Qual o seu sexo? Opções de resposta (resposta única): Feminino; Masculino

Qual o seu nível de escolaridade?

Opções de resposta (resposta única): Ensino fundamental; Ensino médio incompleto; Ensino médio completo; Ensino superior incompleto; Ensino técnico; Ensino superior completo; Pós-graduação; Nenhuma das opções acima.

Qual dessas características melhor descreve o local onde mora?

Opções de resposta (resposta única): Rural; Urbana; Outra? (Especifique)

Questions of the survey – Polish version

1. Po setkach lat wycinania lasow, ludzkość zajmuje dzisiaj około 40% powierzchni ziemii. Z tego, co pozostało z przyrody, ile, Pani/Pana zdaniem, powinno być zachowane (np. w formie parkow, rezerwatow przyrody itp)?

Wszystko (100%)	Większa część (75%)	Połowa (50%)	Jedna czwarta (25%)	Jedna dziesiąta (10%)	Nic (0%)	Nie wiem

2. Jak pilne jest rozwiązywanie problemów środowiskowych podanych poniżej.

	Pilność		
	Niska	Średnia	Wysoka
Zanieczyszczenie powietrza			
Zanieczyszczenie mórz			
Zanieczyszczenie rzek			
Wycinanie lasow tropikalnych			
Zmiany klimatyczne			
Brak wody			
Brak kanalizacji sanitarnej			
Wymieranie gatunków			
Używanie środków ochrony roślin (pestycydów)			
Erozja gleb			

3. Odnosnie ochrony przyrody, wskaż dla każdego stwierdzenia ponizej na ile się z nim zgadzasz lub nie zgadzasz

	Zgadzam się całkowicie	Zgadzam się czesciowo	Czesciowo się nie zgadzam	Całkowicie się nie zgadzam	Nie umiem powiedzieć
Przyroda, jej rośliny i zwierzęta mają wartość samą w sobie, niezależnie od tego, czy są pożyteczne dla nas					
Przyroda ma wartość tylko dlatego, że przynosi korzyści dla ludzkości					

Dane osobiste

Ile masz lat?

18 – 25
26 – 30
31 – 35
36 – 40
41-45
46-50
51 – 55
56-60
61-65
66-70
71-75
76-80
81-85
86-90
91-95
96-100
101 -105
106-110

Jaka jest Twoja płeć?

- Męska
- Żeńska

Wykształcenie

Podstawowe
Srednie
Zawodowe
Wyzsze

Gdzie mieszkasz? Proszę podać miasto i wojewodztwo

Która z poniższych charakterystyk najlepiej opisuje Twoje miejsce zamieszkania?

Miasto (> 100 tys mieszkancow)
Miasteczko (50 – 100 tys)
Wies

Jeśli chcesz napisać jakiś komentarz (wrażenia, krytyka, wypowiedź, sugestie itp.), wykorzystaj to miejsce:

Czy chciałbyś otrzymać wyniki tego badania? Jeśli tak, to prosimy o podanie Twojego adresu e-mail.

Table S2: Correlations between age and gender data and responses regarding the urgency to solve environmental problems Regarding age and urgency (R software).

Environmental problems	**Brazilian men**	**Brazilian women**	**Polish men**	**Polish women**
Air pollution	-0,048748536	0,001878568	-0,69181205	-0,380680547
Seas pollution	-0,058535796	0,045613876	-0,49259583	-0,58464587
Rivers pollution	-0,084590966	-0,057197951	-0,56093421	-0,589892302
Tropical forest clearance	0,022403056	0,00281818	-0,33780364	-0,377889374
Climate change	-0,006236205	0,128857257	-0,05271786	-0,108679494
Water shortage	-0,077943227	0,07025007	-0,2979732	-0,242550034
Lack of sewerage systems	-0,018714358	-0,038488238	-0,16071728	-0,043526781
Species extinction	-0,008062213	0,018384125	-0,53341572	-0,120062786
Pesticides	-0,012542657	0,193090425	-0,41270307	-0,112160591
Soil erosion	0,018642739	0,02536374	-0,4589456	-0,686214256

Table S3: Cross-tabulation - Level of agreement with the statement 'Nature, its plants and animals have a value on their own, independent of their usefulness for us' with gender and education level.

Nature, its plants and animals have a value on their own, independent of their usefulness for us.					
Education level			Gender		Total
			Men	Women	
		N	1	1	2
Primary	Completely agree	%	100	50	66,7
	Partially agree	N	0	1	1
		%	0	50	33,3
	Total	N	1	2	3
		%	100	100	100
Secondary	Completely agree	N	33	35	68
		%	22,8	28	25,2
	Partially agree	N	63	54	117
		%	43,4	43,2	43,3
	Partially disagree	N	39	34	73
		%	26,9	27,2	27
	Completely disagree	N	8	1	9
		%	5,5	8	3,3
	I don't know	N	2	1	3
		%	1,4	8	1,1
	Total	N	145	125	270
		%	100	100	100

Technical	Completely agree	N	1	1	2
		%	4,2	11,1	6,1
	Partially agree	N	0	3	3
		%	0	33,3	9,1
	Partially disagree	N	19	4	23
		%	79,2	44,4	69,7
	Completely disagree	N	4	1	5
		%	16,7	11,1	15,2
	Total	N	24	9	33
		%	100	100	100
Higher	Completely agree	N	7	0	7
		%	63,6	0	50
	Partially agree	N	3	3	6
		%	27,3	100	42,9
	Partially disagree	N	1	0	1
		%	9,1	0	7,1
	Total	N	11	3	14
		%	100	100	100

Table S4: Cross-tabulation - Level of agreement with the statement 'Nature has a value only because it brings benefits to humankind' with gender and education level.

Nature has a value only because it brings benefits to humankind					
Education level			Q Gender		Total
			Male	Female	
Primary	Partially agree	N	0	1	1
		%	0,00	50,00	33,30
	Completely disagree	N	1	1	2
		%	100,00	50,00	66,70
	Total	N	1	2	3
		%	100,00	100,00	100,00
Secondary	Completely agree	N	11	3	14
		%	7,60	2,40	5,20
	Partially agree	N	35	8	43
		%	24,10	6,40	15,90
	Partially disagree	N	71	56	127
		%	49,00	44,80	47,00
	Completely disagree	N	25	54	79
		%	17,20	43,20	29,30
	I don't know	N	3	4	7
		%	2,10	3,20	2,60
	Total	N	145	125	270
		%	100,00	100,00	100,00
Technical	Partially agree	N	20	4	24

		%	83,30	44,40	72,70
	Partially disagree	N	3	2	5
		%	12,50	22,20	15,20
	Completely disagree	N	1	3	4
		%	4,20	33,30	12,10
	Total	N	24	9	33
		%	100,00	100,00	100,00
Higher	Completely agree	N	1	1	2
		%	9,10	33,30	14,30
	Partially agree	N	2	1	3
		%	18,20	33,30	21,40
	Partially disagree	N	4	0	4
		%	36,40	0,00	28,60
	Completely disagree	N	4	1	5
		%	36,40	33,30	35,70
	Total	N	11	3	14
		%	100,00	100,00	100,00