

Changes in Environmental Attitudes in Selected Countries of Central and Eastern Europe

Przemiany postaw wobec środowiska naturalnego w wybranych krajach Europy Środkowo-Wschodniej

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Abstract

The ISSP Environment data from 1993-2010 were used to show changes in environmental attitudes in four countries of Central and Eastern Europe: the Czech Republic, Slovenia, Bulgaria and Russia. Eight indicators were taken into account in the analysis. The Czech Republic and Slovenia displayed the most similar trends, whereas in Bulgaria and Russia these trends were slightly different. Generally, it can be concluded that pro-environmental attitudes strengthened, especially in the Czech Republic and Slovenia, or at least maintained the same level.

Key words: environmental attitudes, Central and Eastern Europe, Bulgaria, Czech Republic, Russia, Slovenia, International Social Survey Program

Streszczenie

Wykorzystując dane ISSP Environment z lat 1993-2010 ukazano przemiany postaw wobec środowiska naturalnego w czterech krajach Europy Środkowo-Wschodniej: Czechach, Słowenii, Bułgarii i Rosji. W analizach uwzględniono 8 wskaźników. W zakresie tendencji, krajami najbardziej podobnymi są Czechy i Słowenia. Bułgaria nieco różni się od tych dwóch krajów, podobnie Rosja. Jeżeli pominąć szczegóły, można dojść do wniosku, że w latach 1993-2010 postawy pro-środowiskowe uległy w tych krajach wzmocnieniu (zwłaszcza w Czechach i Słowenii) lub też przynajmniej utrzymały się na dotychczasowym poziomie.

Słowa kluczowe: postawy wobec ochrony środowiska, Europa Środkowo-Wschodnia, Bułgaria, Czechy, Rosja, Słowenia, International Social Survey Program

Introduction

The last quarter of a century saw important or even revolutionary changes in Central and Eastern Europe: the fall of communism, liberation from the Soviet Union's domination, economic transformation, and some new countries becoming members of NATO and the European Union.

The democratization process manifested itself also in the area of social research, including surveys of public opinion, which became more dynamic and independent from the political control. There is no doubt that opinion polls are a very important component of democracy. Like the independent media, they may be considered to be one of the pillars of democracy

representing people's opinions rather than the views of politicians. The democratization of Central and Eastern Europe gave rise to the processes which enabled Central and Eastern European countries to participate more fully in different international research programs, including the International Social Survey Program (ISSP) Environment, which was one of the first thematic modules carried out in politically free Central and Eastern Europe.

Methodology

The ISSP (International Social Survey Program) is an international comparative research project con-

ducted annually in many countries all over the world. Its main aim is the regular measurement of variables which cover a broad scope of social life. A questionnaire method on random samples is employed in the project. The ISSP thematic modules are repeated every few years, which enables to observe changes in the selected modules. One of the modules is the ISSP Environment¹, which was implemented in 1993, 2000 and 2010 (the next research is planned for 2020). This affords an insight into changes in environmental attitudes over the period of 17 years, a long enough time for such changes to occur and be detected.

The article compares attitudes towards the natural environment in four countries: Bulgaria, the Czech Republic, Slovenia and Russia. These are the only Central and Eastern European countries that were included in all three editions of the ISSP Environment. So they were selected more out of necessity, but such choice turned out to be right in terms of its cognitive value. The countries analyzed differ significantly. On the one hand, there is the Czech Republic and Slovenia, which joined the EU in the first enlargement phase (2004), then Bulgaria, which became a member of the EU in the second enlargement phase (2007), and finally Russia, which is not the EU member. The countries also represent different levels of income. In this case, the best indicator is the GDP (Gross Domestic Product) *per capita*. According to the World Bank, between 2010 and 2014, it amounted to approximately \$7,700 in Bulgaria, \$19,600 in the Czech Republic, \$24,000 in Slovenia, and \$12,700 in Russia. Thus, the group analyzed includes: a relatively poor EU country (Bulgaria), noticeably richer country outside the EU (Russia) and much richer EU countries (the Czech Republic and Slovenia), where the GDP *per capita* was 83-84% of the average for the whole EU in 2014 (according to the Eurostat data). Moreover, the countries represent different geographical areas (center, south and east of Europe), and even different dominant religions (religious options): the Orthodox Church in Bulgaria and Russia, Catholicism in Slovenia and atheism in the Czech Republic.

The aim of the analysis is to answer the following research questions: (1) do and to what extent Bulgaria, the Czech Republic, Slovenia and Russia differ in terms of environmental attitudes? (2) what changes in environmental attitudes took place in these countries over the past decades?

The following indicators were selected from the set of the ISSP Environment 1993-2010 variables: (1) agree to pay much higher prices to protect environment, (2) agree to pay much higher taxes to protect environment, (3) agree to cut the standard of living

to protect environment, (4) make effort – sort glass for recycling (5) signed a petition for environment protection in last 5 years, (6) given money for environment protection in last 5 years, (7) taken part in a protest demonstration for environment protection in last 5 years, (8) worry too much about future environment². All these variables indicate different aspects of the attitude towards environment protection. The total sample consisted of 15,320 respondents, including 3,197 in Bulgaria, 3,677 in the Czech Republic, 5,255 in Russia, and 3,191 in Slovenia. In total, 6,717 men and 8,603 women took part in the study. The distribution of the respondents' mean age by country and by year is shown in Table 2. The sample included 5,149 respondents in 1993, 5,039 in 2000, and 5,132 in 2010. The ISSP Environment sample selection depends on the research program to which the module is attached. However, it is always some form of random selection.

The research tool employed in the ISSP Environment is a standardized survey questionnaire which respondents fill in on their own.

Table 1. Respondent's country and sex by year

Country		Year			Total
		1993	2000	2010	
Czech Republic	Male	479	502	684	1665
	Female	526	742	744	2012
	Total	1005	1244	1428	3677
Slovenia	Male	477	478	492	1447
	Female	555	599	590	1744
	Total	1032	1077	1082	3191
Bulgaria	Male	565	473	422	1460
	Female	616	540	581	1737
	Total	1181	1013	1003	3197
Russia	Male	809	777	559	2145
	Female	1122	928	1060	3110
	Total	1931	1705	1619	5255
Total	Male	2330	2230	2157	6717
	Female	2819	2809	2975	8603
	Total	5149	5039	5132	15320

Table 2 Respondent's mean age by country and year

Country	Year	Mean	N
Czech Republic	1993	44,84	1001
	2000	46,41	1244
	2010	47,59	1414
Slovenia	1993	42,80	1030
	2000	44,92	1077
	2010	48,64	1082
Bulgaria	1993	49,10	1175
	2000	46,96	1008
	2010	51,93	1003
Russia	1993	41,31	1931
	2000	44,66	1705
	2010	47,48	1619

¹ More information about the ISSP Environment can be found in P. Rydzewski, 2010, *Problemy Ekorożwoju/Problems of Sustainable Development*, vol. 5, no 2, p. 51-60.

² Obviously, the variable *we worry too much about the future of the environment and not enough about prices and jobs today* must be interpreted the *other way round*, i.e. a negative response indicates pro-environmental attitude.

Results

One of the indicators used in the research were the answers to the question about willingness to pay much higher prices to protect the environment³. This

Table 3. Protect environment: pay much higher prices by year and country

Country			Year		
			1993	2000	2010
Czech Republic	Willing	n	263	346	556
		%	39,5%	38,8%	53,6%
	Unwilling	n	403	546	481
		%	60,5%	61,2%	46,4%
	Total	n	666	892	1037
		%	100,0%	100,0%	100,0%
Slovenia	Willing	n	412	463	485
		%	69,1%	58,6%	60,9%
	Unwilling	n	184	327	312
		%	30,9%	41,4%	39,1%
	Total	n	596	790	797
		%	100,0%	100,0%	100,0%
Bulgaria	Willing	n	499	451	409
		%	53,1%	66,6%	52,2%
	Unwilling	n	440	226	374
		%	46,9%	33,4%	47,8%
	Total	n	939	677	783
		%	100,0%	100,0%	100,0%
Russia	Willing	n	827	613	563
		%	62,4%	49,4%	54,0%
	Unwilling	n	499	628	480
		%	37,6%	50,6%	46,0%
	Total	n	1326	1241	1043
		%	100,0%	100,0%	100,0%
Total	Willing	n	2001	1873	2013
		%	56,7%	52,0%	55,0%
	Unwilling	n	1526	1727	1647
		%	43,3%	48,0%	45,0%
	Total	n	3527	3600	3660
		%	100,0%	100,0%	100,0%

Chi-squared (Sig.): Czech Republic (<0,0005), Slovenia (<0,0005), Bulgaria (<0,0005), Russia (<0,0005).

is a very important issue in the context of sustainable development. In the Czech Republic, the frequency of pro-ecological attitudes measured by this indicator, increased from 38-39% between 1993 and 2000 to 53.6% in 2010. On the other hand, in Slovenia, the initially high percentage of pro-environmental attitudes that amounted to 69.1% in 1993 decreased to 59-61% in the following years. In Bulgaria, a still another trend was observed: the percentage of pro-environmental attitudes that was 53.1% in 1993 increased to 66.6% in 2000 to again decrease to 52.2% in 2010. By contrast, in Russia, there was a significant fall from 62.4% in 1993 to 49.4% in 2000, and then an increase to 54% in 2010. So four different

³ The original set of responses (very willing, fairly willing, neither willing nor unwilling, fairly unwilling, very unwilling, can't choose) was reduced by combining *very willing* and *fairly willing* into one category of *willing* and also

trends can be observed in these countries: a quasi-linear increase in the Czech Republic, a quasi-linear decrease in Slovenia, the U-shaped relation in Russia and the inverted U-shaped relation in Bulgaria. In the last decade of the research (2000-2010), a significant

Table 4. Protect environment: pay much higher taxes by year and country

Country			Year		
			1993	2000	2010
Czech Republic	Willing	n	160	442	603
		%	22,6%	41,6%	60,1%
	Unwilling	n	549	621	401
		%	77,4%	58,4%	39,9%
	Total	n	709	1063	1004
		%	100,0%	100,0%	100,0%
Slovenia	Willing	n	307	495	510
		%	52,8%	51,5%	64,9%
	Unwilling	n	274	467	276
		%	47,2%	48,5%	35,1%
	Total	n	581	962	786
		%	100,0%	100,0%	100,0%
Bulgaria	Willing	n	435	504	556
		%	46,0%	66,0%	80,2%
	Unwilling	n	511	260	137
		%	54,0%	34,0%	19,8%
	Total	n	946	764	693
		%	100,0%	100,0%	100,0%
Russia	Willing	n	806	375	813
		%	58,9%	28,4%	74,5%
	Unwilling	n	562	945	278
		%	41,1%	71,6%	25,5%
	Total	n	1368	1320	1091
		%	100,0%	100,0%	100,0%
Total	Willing	n	1708	1816	2482
		%	47,4%	44,2%	69,4%
	Unwilling	n	1896	2293	1092
		%	52,6%	55,8%	30,6%
	Total	n	3604	4109	3574
		%	100,0%	100,0%	100,0%

Chi-squared (Sig.): Czech Republic (<0,0005), Slovenia (<0,0005), Bulgaria (<0,0005), Russia (<0,0005).

increase of the indicator was observed in the Czech Republic; in Russia, this increase was much smaller, while in Slovenia and Bulgaria, a decrease was observed (slight and significant, respectively). In the final year of the research (2010), residents of Slovenia turned out to be the ones who were willing to accept price rises most often (60.9%) when compared with residents of the remaining countries (approx. 52-54%).

Another indicator of the environmental attitude was a variable that measured declarations of willingness to pay much higher taxes in order to protect the environment. In the Czech Republic, this indicator of pro-environmental attitude went up from 22.6% in 1993 to 41.6% in 2000, and to 60.1% in 2010. In Slovenia, the indicator stayed at a similar level of approx. 52-53% in 1993 and 2000, but in 2010 it increased to 64.9%. In Bulgaria, on the other hand, it

combining *fairly unwilling* and *very unwilling* into one category of *unwilling*. Answers *neither willing nor unwilling* and *can't choose* were not taken into consideration.

grew from 46.6% in 1993 to 66% in 2000 and to 80.2% in 2010. Finally, in Russia, it fell from 58.9% in 1993 to 28.4% in 2000 and then went up to 74.5% in 2010. So, a linear growth was observed in the Czech Republic and Bulgaria, a quasi-linear growth in Slovenia, and the U-shaped growth in Russia, but all the countries saw an increase of the indicator. In the last year of the research, the indicator reached the highest values in Bulgaria and Russia (approx. 80% and approx. 75% respectively), compared with approx. 60% and 65% in the Czech Republic and Slovenia respectively.

Table 5. Protect environment: cut standard of living by year and country

Country			Year		
			1993	2000	2010
Czech Republic	Willing	n	188	418	406
		%	25,6%	45,3%	41,0%
	Unwilling	n	545	505	584
		%	74,4%	54,7%	59,0%
	Total	n	733	923	990
		%	100,0%	100,0%	100,0%
Slovenia	Willing	n	281	291	369
		%	51,7%	32,9%	47,5%
	Unwilling	n	262	593	408
		%	48,3%	67,1%	52,5%
	Total	n	543	884	777
		%	100,0%	100,0%	100,0%
Bulgaria	Willing	n	370	270	559
		%	40,3%	42,2%	82,6%
	Unwilling	n	547	370	118
		%	59,7%	57,8%	17,4%
	Total	n	917	640	677
		%	100,0%	100,0%	100,0%
Russia	Willing	n	619	346	370
		%	47,5%	25,4%	39,5%
	Unwilling	n	685	1018	566
		%	52,5%	74,6%	60,5%
	Total	n	1304	1364	936
		%	100,0%	100,0%	100,0%
Total	Willing	n	1458	1325	1704
		%	41,7%	34,8%	50,4%
	Unwilling	n	2039	2486	1676
		%	58,3%	65,2%	49,6%
	Total	n	3497	3811	3380
		%	100,0%	100,0%	100,0%

Chi-squared (Sig.): Czech Republic (<0,0005), Slovenia (<0,0005), Bulgaria (<0,0005), Russia (<0,0005).

The willingness to lower the standard of living in order to protect the environment was yet another indicator of pro-environmental attitude. In the Czech Republic, this indicator grew from 25.6% in 1993 to about 41-45% between 2000 and 2010. Slovenia experienced a marked decline from 51.7% in 1993 to 32.9% in 2000, followed by a re-growth to 47.5% in 2010. A substantial increase from approx. 40-42% in 1993 and in 2000 to 82.6% in 2010 was noted in Bulgaria. In Russia, a decrease from 47.5% in 1993 to 25.4% in 2000 was only partly compensated by an increase to 39.5% in 2010. Looking for some patterns, it can be concluded that the Czech Republic and especially Bulgaria saw a quasi-linear increase of this indicator, Slovenia experienced the U-shaped fall, just like it was the case in Russia. However, if

the research results from the last decade (2000-2010) are taken into consideration, increases in this indicator of pro-ecological attitudes can be observed in Slovenia, Russia, and most visibly in Bulgaria. A very slight decline is seen only in the Czech Republic. In the last year of the research, the indicator reached a very high level in Bulgaria (over 80%), was lower in Slovenia (approx. 48%) and significantly lower in the Czech Republic and Russia (approx. 40-41%).

The indicators of environmental attitudes described so far were all based on the respondents' opinions. Let us now turn to the indicators based on the respondents' behaviors.

One of them is the frequency of sorting waste (in this case, glass). In the Czech Republic, the percentage of people who always sorted glass for recycling grew from 12.5% in 1993 to 27.9% in 2000 and 41% in 2010. A similar upward trend was observed with respondents who often sorted glass (14.8%, 27.1%, 32.4% respectively). In Slovenia, this increase was even more noticeable. In 1993, 16.9% of the country's population always sorted glass for recycling, in 2000 their number grew to 19.5%, and in 2010 it amounted to 62.7%. The increase in this type of behavior concerned also individuals who often sorted glass (from approx. 19-20% between 1993 and 2000 to 25.1% in 2010). A slowly increasing trend in sorting glass was observable in Bulgaria (from approx. 3% in 1993 and 2000 to 12.7% in 2010 (sort always) and from 4-5% in 1993 and 2000 to 24.6% in 2010 (sort often). Likewise, in Russia, there was a growth, but from a very low level of 2-3% to an equally low value of approx. 6% (sort always) and from approx. 4% to 10% (sort often).

The surge in glass sorting between 2000 and 2010 was probably related to the availability of recycling. In all the countries analyzed in 2010, no respondent indicated lack of possibilities for sorting waste. However, the countries differ significantly in terms of using the recycling potential. In the last year of the study, as many as 97.8% Slovenians, 73.4% Czechs, 37.3% Bulgarians and only 15.8% Russians always or often sorted glass for recycling.

Other indicators of pro-ecological attitudes based on behavior included: signing a petition connected with environment protection, giving money for this purpose and participating in an environmental demonstration (in last 5 years). In 1993, the Czechs most often signed petitions (72.3%), in 2000 donated money (62.1%), while in 2010 participated in demonstrations (76.6%). A similar pattern was observed in Slovenia (59.7%, 61.5%, and 64.6% respectively). Bulgarians signed petitions most often (65.6%) in 1993, while in 2000 and 2010 participated in environmental demonstrations (80.1%, 58.2% respectively). In Bulgaria, giving money for environmental purposes was more common in the previous decades (approx. 27-29% compared to 10.6% in the last year of the research). In 1993, the

Table 6.

Effort: sort glass for recycling by country and year

Effort: sort glass for recycling			Year			
			1993	2000	2010	
Czech Republic	Always	N	126	341	582	
		%	12,5%	27,9%	41,0%	
	Often	N	149	332	460	
		%	14,8%	27,1%	32,4%	
	Sometimes	N	181	339	293	
		%	18,0%	27,7%	20,6%	
	Never	N	86	98	86	
		%	8,6%	8,0%	6,1%	
	Recycling not available	N	462	113	0	
		%	46,0%	9,2%	0,0%	
	Summary		N	1004	1223	1421
			%	100,0%	100,0%	100,0%
Slovenia	Always	N	174	210	662	
		%	16,9%	19,5%	62,7%	
	Often	N	199	210	265	
		%	19,3%	19,5%	25,1%	
	Sometimes	N	247	231	105	
		%	24,0%	21,4%	9,9%	
	Never	N	87	62	24	
		%	8,4%	5,8%	2,3%	
	Recycling not available	N	323	364	0	
		%	31,4%	33,8%	0,0%	
	Summary		N	1030	1077	1056
			%	100,0%	100,0%	100,0%
Bulgaria	Always	N	31	32	83	
		%	2,6%	3,2%	12,7%	
	Often	N	63	38	161	
		%	5,4%	3,8%	24,6%	
	Sometimes	N	212	134	227	
		%	18,0%	13,3%	34,7%	
	Never	N	315	388	184	
		%	26,8%	38,4%	28,1%	
	Recycling not available	N	555	418	0	
		%	47,2%	41,4%	0,0%	
	Summary		N	1176	1010	655
			%	100,0%	100,0%	100,0%
Russia	Always	N	69	37	64	
		%	3,6%	2,2%	5,8%	
	Often	N	83	68	109	
		%	4,3%	4,0%	10,0%	
	Sometimes	N	253	163	251	
		%	13,1%	9,6%	22,9%	
	Never	N	537	621	671	
		%	27,8%	36,7%	61,3%	
	Recycling not available	N	989	803	0	
		%	51,2%	47,5%	0,0%	
	Summary		N	1931	1692	1095
			%	100,0%	100,0%	100,0%
	Always	N	400	620	1391	
		%	7,8%	12,4%	32,9%	
	Often	N	494	648	995	
		%	9,6%	13,0%	23,5%	
	Sometimes	N	893	867	876	
		%	17,4%	17,3%	20,7%	
	Never	N	1025	1169	965	
		%	19,9%	23,4%	22,8%	
	Recycling not available	N	2329	1698	0	
		%	45,3%	33,9%	0,0%	
	Summary		N	5141	5002	4227
			%	100,0%	100,0%	100,0%

Gamma (Sig.): Czech Republic (<0,0005), Slovenia (<0,0005), Bulgaria (<0,0005), Russia (<0,0005).

Table 7. Last five years: signed a petition, given money, protest demonstration by country and year⁴

Last five years			Year		
			1993	2000	2010
Czech Republic	Signed a petition	N	146	34	65
		%	72,3%	6,4%	25,8%
	Given money	N	59	330	44
		%	29,2%	62,1%	17,5%
	Protest demonstration	N	58	244	193
		%	28,7%	46,0%	76,6%
Summary		N	202	531	252
Slovenia	Signed a petition	N	108	49	54
		%	59,7%	18,1%	29,8%
	Given money	N	80	166	39
		%	44,2%	61,5%	21,5%
	Protest demonstration	N	58	109	117
		%	32,0%	40,4%	64,6%
Summary		N	181	270	181
Bulgaria	Signed a petition	N	103	35	63
		%	65,6%	7,0%	44,7%
	Given money	N	45	137	15
		%	28,7%	27,3%	10,6%
	Protest demonstration	N	71	402	82
		%	45,2%	80,1%	58,2%
Summary		N	157	502	141
Russia	Signed a petition	N	205	22	152
		%	56,6%	2,3%	70,0%
	Given money	N	192	251	26
		%	53,0%	26,3%	12,0%
	Protest demonstration	N	75	819	73
		%	20,7%	85,8%	33,6%
Summary		N	362	955	217

most common environmental behavior in Russia was signing petitions (56.6%) and giving money (53%), and in 2000 taking part in demonstrations (85.8%). In 2010, signing petitions was again the most common environmental behavior (70%).

Let us consider the research results from a different perspective. The frequency of signing petitions in the Czech Republic, Slovenia and Bulgaria fell significantly between 1993 and 2000 (usually from several dozen to a dozen or so or even several per cent) in order to rise between 2000 and 2010, though not to the level from 1993. In Russia, on the other hand, after a similar decline in the popularity of petitions in 2000, this form of action revived at a high level (70%). Giving money for environmental purposes in the Czech Republic and Slovenia took a reverse U-shaped trend, reaching the highest level in 2000 when approx. 62% people gave money for environmental purposes. Such generosity was not observed either earlier or later in the period covered in the research. In Bulgaria and Russia, a downward trend in giving money for environmental purposes was noted (in Russia it was linear, in Bulgaria – quasi-linear amounting to approx. 11-12% in 2010). Taking part in demonstrations was on the linear increase in the Czech Republic and Slovenia and became the most common form of pro-environmental activity of the three analyzed here (approx. 65% in Slovenia and

⁴ Multiple Response Table, dichotomy group tabulated at value 1 (yes), percentages and totals are based on respondents' answers. Statistical tests are not available.

Table 8. Worry too much about future environment by country and year

Worry too much about future environment			Year			Total	
			1993	2000	2010		
Czech Republic	Strongly Agree	N	186	119	168	473	
		%	19,0%	10,0%	11,8%	13,2%	
	Agree	N	203	248	361	812	
		%	20,8%	20,8%	25,4%	22,6%	
	Neither Agree nor Disagree	N	156	257	523	936	
		%	16,0%	21,5%	36,9%	26,1%	
	Disagree	N	247	399	317	963	
		%	25,3%	33,4%	22,3%	26,8%	
	Strongly Disagree	N	185	172	50	407	
		%	18,9%	14,4%	3,5%	11,3%	
	Total		N	977	1195	1419	3591
			%	100,0%	100,0%	100,0%	100,0%
Slovenia	Strongly Agree	N	134	110	209	453	
		%	13,6%	10,7%	19,6%	14,7%	
	Agree	N	395	337	242	974	
		%	40,2%	32,7%	22,7%	31,6%	
	Neither Agree nor Disagree	N	148	152	399	699	
		%	15,1%	14,7%	37,4%	22,7%	
	Disagree	N	265	340	168	773	
		%	27,0%	32,9%	15,7%	25,1%	
	Strongly Disagree	N	40	93	49	182	
		%	4,1%	9,0%	4,6%	5,9%	
	Total		N	982	1032	1067	3081
			%	100,0%	100,0%	100,0%	100,0%
Bulgaria	Strongly Agree	N	256	93	299	648	
		%	24,9%	11,9%	30,4%	23,2%	
	Agree	N	207	269	315	791	
		%	20,2%	34,4%	32,0%	28,3%	
	Neither Agree nor Disagree	N	109	216	243	568	
		%	10,6%	27,6%	24,7%	20,3%	
	Disagree	N	162	122	86	370	
		%	15,8%	15,6%	8,7%	13,2%	
	Strongly Disagree	N	293	83	40	416	
		%	28,5%	10,6%	4,1%	14,9%	
	Total		N	1027	783	983	2793
			%	100,0%	100,0%	100,0%	100,0%
Russia	Strongly Agree	N	209	110	167	486	
		%	12,0%	7,6%	10,6%	10,2%	
	Agree	N	204	294	277	775	
		%	11,8%	20,3%	17,5%	16,3%	
	Neither Agree nor Disagree	N	433	269	628	1330	
		%	24,9%	18,6%	39,7%	27,9%	
	Disagree	N	381	505	322	1208	
		%	21,9%	34,9%	20,4%	25,4%	
	Strongly Disagree	N	509	269	188	966	
		%	29,3%	18,6%	11,9%	20,3%	
	Total		N	1736	1447	1582	4765
			%	100,0%	100,0%	100,0%	100,0%
Total	Strongly Agree	N	785	432	843	2060	
		%	16,6%	9,7%	16,7%	14,5%	
	Agree	N	1009	1148	1195	3352	
		%	21,4%	25,8%	23,7%	23,6%	
	Neither Agree nor Disagree	N	846	894	1793	3533	
		%	17,9%	20,1%	35,5%	24,8%	
	Disagree	N	1055	1366	893	3314	
		%	22,3%	30,6%	17,7%	23,3%	
	Strongly Disagree	N	1027	617	327	1971	
		%	21,7%	13,8%	6,5%	13,9%	
	Total		N	4722	4457	5051	14230
			%	100,0%	100,0%	100,0%	100,0%

Gamma (Sig.): Czech Republic (<0.0005), Slovenia (<0.0005), Bulgaria (<0.0005), Russia (<0.0005)

approx. 77% in the Czech Republic). By contrast, in Bulgaria and Russia, participation in demonstrations after reaching the peak level in 2000 with 80-86% of the country's population taking part in such demonstrations, became less popular (in Bulgaria it dwindle

d to about 58% and in Russia to 34%). In the last year of the research, participating in demonstrations was the most common pro-environmental activity in the Czech Republic, Slovenia and Bulgaria, while the Russians preferred signing petitions (an activity

which remained quite popular in Bulgaria as well). This may indicate radicalization of activities and moving from indirect action (perhaps perceived as less effective) to more direct and confrontational activities. By contrast, a reverse trend was observed in Russia, which might be resulting from a failure of direct actions there.

A slightly different picture emerges when another indicator is taken into account: concern about future environment, but in the context of today's problems (prices, the labor market). Positive replies indicate placing higher importance on the current problems than on environmental issues, while negative responses express concern about the environment despite current social problems.

In the Czech Republic, the indicator of pro-environmental attitudes between 1993 and 2000 remained at the level of approx. 44-48%, but in 2010 it decreased to approx. 26%.⁵ There was a linear increase in the percentage of people that did not have strong opinions about the analyzed issue (neutral attitude) from 16% in 1993 to 21.5% in 2000 and up to 36.9% in 2010. The attitudes giving a higher priority to issues connected with economy and finances (such as prices and employment) were initially (in 1993) expressed often (39.8%), in 2000 they attracted less support (30.7%), but then once again became more often expressed (37.3% in 2010). To generalize these trends, it can be stated that pro-environmental attitudes in the Czech Republic lost slightly in popularity in favor of attitudes placing higher importance on economic issues, but above all in favor of neutral attitudes, which can be interpreted as indecisiveness.

A similar trend can be observed in Slovenia: a significant decrease in the frequency of pro-environmental attitudes to the level of 20.3% compared to 31.1% in 1993, and as much as 42% in 2010. Slovenia also experienced a significant increase in the frequency of neutral attitudes (from approx. 15% in 1993 and 2000 to 37.4% in 2010). In contrast to the Czech Republic, this was not accompanied by an increase in pro-economy attitudes, the frequency of which decreased from 53.9% in 1993 to approx. 42-43% between 2000 and 2010.

Similar, though much more pronounced trends occurred in Bulgaria. The frequency of environmental attitudes decreased almost four times (from 44.3% in 1993 to 26.2% in 2000 and 12.8% in 2010). At the same time, pro-economy attitudes increased in popularity from approx. 45%-46% between 1993 and 2000 to 62.5% in 2010. The frequency of neutral attitude increased from a low level of 10.6% in 1993 to 27.6% in 2000 and then slightly decreased to 24.7% in 2010.

The situation in Russia was specific with pro-environmental attitudes relatively more frequent and pro-economy attitudes relatively rarer than in the other

three countries. However, the trend was similar especially to that in Slovenia and the Czech Republic: a fall in pro-environmental attitudes (from 51-54% between 1992 and 2000 to 32.2% in 2010), minor changes in pro-economy attitudes (from 23.8% in 1993 to approx. 28% between 2000 and 2010), and an increase in neutral attitudes (from 23.8% in 1993 and 18.6% in 2000 to 39.7% in 2010). Taking into account the last year of the research (2010), the four countries differ with regard to the frequency of environmental attitudes. Such attitudes were most frequent in Russia (32.2%), less frequent in the Czech Republic and Slovenia (25.9% and 20.3% respectively), and the most rare in Bulgaria (12.8%). By contrast, attitudes favoring economy over ecology were found most often in Bulgaria (62.5%), less often in Slovenia (42.3%) and the Czech Republic (37.3%), and were the most uncommon in Russia (28.1%).

Conclusions

Many important changes in the attitudes towards the environment took place in the Czech Republic, Slovenia, Bulgaria and Russia over the last few decades. Do these countries differ in terms of their residents' attitudes to environmental issues? The answer is *yes* and *no* and depends on the indicator which is used. Generally speaking, the Czech Republic and Slovenia demonstrate the most similar trends while Bulgaria and Russia are slightly different. In that case, is it possible to answer the question about trends that these countries display when it comes to concern for the environment? Is there one uniform trend? The general statement may be risked that between 1993 and 2010 pro-environmental attitudes in these countries strengthened (especially in the Czech Republic and Slovenia) or at least maintained the same level. This conclusion can be drawn on the basis of most indicators used. It should be noted, however, that the analysis of the first indicator (worry too much about future environment), which is interpreted *the other way round* and takes into account the realities of everyday life, does not support the conclusion. Smaller or greater discrepancies in the interpretation of other indicators within individual countries are also visible. How can these discrepancies be explained? First of all, the wording of the questionnaire questions is very important. Questions, after all, give some context to a problem, e. g. we will get a different result when we ask about willingness to pay higher taxes to protect environment when it is not clear how high these taxes will be and whether they will more affect people with higher incomes than when we ask whether people worry too much about the future environment with so many other problems around, for example unemployment. In this example, we have

⁵ In the description of the relationships between variables, positive responses (*strongly agree* and *agree*) were com-

bined into one category, while negative responses (*disagree* and *strongly disagree*) into the other one; neutral responses (*neither agree nor disagree*) were left unchanged.

quite an indefinite future that is difficult to predict confronted with the realities of everyday life that is here and now and is often a source of very real concern. Perhaps the distribution of responses depends on how precisely we specify the sacrifices that must be made and how exactly we present competitive values. It may be stated that the more general and abstract the question is, the more *pro-ecological* responses it generates (after all, we all want to live in a healthy and unpolluted environment). On the other hand, making the respondent sacrifice something specific which in his mind translates into a measurable *loss* may result in getting a different answer. Another issue is how accurately behaviors can be measured; what does it mean that the respondent *often* or *rarely* sorts waste (e.g. glass)? The same frequency can be defined differently. If someone sorts glass for example twice a week, is it a frequent activity or not? The answers may vary.

If relying on indicators related to opinions can sometimes be problematic, wouldn't it be better to use indicators based on facts, such as sorting waste (glass), taking part in a demonstration, or signing a petition? One problem which has already been pointed out is the ambiguity of frequency scale which is so often used in behavior studies. Another problem is the *degree of involvement*. Can the behavior of someone who chose to go to the pro environment organization's office to sign a petition and someone who signed a petition when asked to do so in the street or clicked on the *sign* button on the social networking site asked by a friend, be interpreted in the same way? Similarly, if someone gave 1 euro (in 5 years) to support a shelter for homeless animals asked by some activist, he may consider himself as belonging to the group which *gave money for environmental protection*? And what about those who would be willing to sign a petition or take part in a demonstration, but this is not possible in the place where they live?

My aim is not to undermine the value of the research results, especially my own analysis. All I want to do (as a sociologist, methodologist and analyst) is to draw attention to some problems (probably familiar to many readers) that make it necessary to keep the research results in perspective. These problems are not anyone's fault; we just have no better measurement tools at our disposal and people usually react to questions included in questionnaires in this and not the other way.

It should also be noted that the research conducted fits in well with the concept of sustainable development, a concept which is not limited to ecological issues, but includes also economic and social ones. Pro-environmental attitude entails many consequences; for example, the willingness to pay higher taxes has direct economic consequences and the readiness to lower the standard of living in order to protect the natural environment is at the same time an important social issue. In fact, all these matters are interconnected, which makes them particularly challenging for further research of this type.

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