UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

COMMITTEE ON ENVIRONMENTAL POLICY
CONFERENCE OF EUROPEAN STATISTICIANS

Joint Intersectoral Task Force on Environmental Indicators

THIRD NATIONAL REVIEW OF THE APPLICATION OF ENVIRONMENTAL INDICATORS

Submitted by Serbia[1]

I.   EVALUATION OF FURTHER FIVE INDICATORS FROM THE *UNECE INDICATOR GUIDELINES* [2]

Please respond to the following questions on each of the five indicators by filling in Table A hereunder.

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[1] Prepared by Milijana Ćeranić, Statistical Office of the Republic of Serbia and Tihomir Popović, Serbian Environment Protection Agency (SEPA).
[2] These indicators were selected by the Joint Task Force, at its meeting held in Geneva on 3-4 May 2010, for the discussion at it next meeting to be held on 1-2 September 2010 in Geneva. The description of the indicators is available online at: www.unece.org/env/documents/2007/ece/ece.belgrade.conf.2007.inf.6.e.pdf.

Table A. EVALUATION OF FURTHER FIVE INDICATORS FROM THE *UNECE INDICATOR GUIDELINES*

Indicator	A. Effective inter-agency cooperation mechanisms to produce the indicator	B. Data quality assurance and control procedures for the production of the indicator	C. Publication of the indicator in statistical compendiums and state-of-the-environment reports
Reuse and recycling of freshwater			
Polluted (non-treated) wastewaters	SEPA collect data about wastewaters according PRTR protocol. From 2011. SEPA will calculate this indicator. There is no any other cooperation due to this issue. Statistical Office of Republic of Serbia collected data of discharges wastewater, provided from the regular annual surveys "Water use and protection of waters against pollution from industry", division (5-35 ISIC, Rev.4 ;) and "Water sewage systems", (division 37 ISIC, Rev.4 ;)	SEPA try to establish QA/QC system and to develop necessary procedures. For now, there is no QA/QC control Since 2007, data quality control was significantly improved by introducing new software for data processing. The methodology based on JQ_UNSD/UNEP – Environmental statistics (part –water), JQ_OECD/Eurostat – Inland water and WFD Directive - 2000/60/EC (in line with national regulation and possibilities).	These indicators have been published, in Statistical Yearbook, Municipals Yearbook, Statistical Bulletin - Ecobulletin, Communications: Wastewater discharged (ZS40) and Water use and protection against pollution (ZS50) and Web-site www.stat.gov.rs by Statistical Office of the Republic of Serbia. SEPA don't calculate this indicator and we will do that in 2011.

Indicator	A. Effective inter-agency cooperation mechanisms to produce the indicator	B. Data quality assurance and control procedures for the production of the indicator	C. Publication of the indicator in statistical compendiums and state-of-the-environment reports
Forest and other wooded land	SORS results are compared with previous data and determine the causes of changes. SEPA collects data from CORINE Land Cover, Forest inventory, Statistical office and Scientific papers.	SORS The data that have a variable, are acceptable if they are in accordance with the rules of forestry science and profession SEPA All data can be used for development of national indicators, and for most of the international indicators. For some international indicator there is no possibility for data collection.	Statistical Publication – Forestry Bulletin and Yearbook (Web-site www.stat.gov.rs) SEPA National Environment report Sectorial National report UN reports EEA Reports
Energy intensity	Ministry of Mining and Energy is responsible institution	Elements for computing Energy intensity: **Inland consumption** – Statistical Office provided data for electricity, heat, coal, gas, oil and derivates, fire wood and geothermal energy since 2008. All data are produced according IEA/Eurostat methodology. Data are disseminated by Statistical Office`s website and appropriate annual publication. Deadline for previous year data is the end of September in the current year. **GDP** – Statistical Office does not produce GDP at 2000 market prices in the national currency. World Bank provides GDP at 2000 market prices USD and in USD in PPP.	SEPA National Environment report Statistical Office does not publish energy intensity.

Indicator	A. Effective inter-agency cooperation mechanisms to produce the indicator	B. Data quality assurance and control procedures for the production of the indicator	C. Publication of the indicator in statistical compendiums and state-of-the-environment reports
Composition of road motor vehicle fleet by fuel type	SEPA established the project for calculating air pollutants emissions using COPERT 4 methodology in cooperation with Traffic faculty in Belgrade. This indicator is one of by-products of this project. The project will be finished at the end of 2010.	No QA/QC.	No publication or report.

II. TIME SERIES DATA ON THE INDICATORS FOR 2003-2009

Please fill in the tables below with the data on each of the five indicators.

Table1. Reuse and recycling of freshwater: *Serbia*

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
1	Freshwater use, total (including 2)	mio m^3/y	3029		2406		4003		3660		3753		3776		3903
2	Reused or recycled water, total	mio m^3/y													
3	Share of reused or recycled water in the total volume of water used (2/1x100)	%													
	Share of reused or recycled water in the total volume of water used by:														
4	Households	%													
5	Agriculture, forestry and fishing (ISIC 01-03)	%													
6	*of which* for irrigation in agriculture	%													
7	Manufacturing (ISIC 10-33)	%													
8	Electricity industry (ISIC 351)	%													
9	Other economic activities	%													

Table 2. Polluted (non-treated) wastewaters: *Serbia*

Line	Category	Unit	2003	2004	2005	2006	2007	2008	2009
1	Wastewater, total volume	mio m^3/y			3779	3399	3527	3611	3722
2	Non-treated wastewater, total volume discharged into water bodies	mio m^3/y			3468	3087	3271	3390	3488
3	Share of non-treated wastewater in the total volume of wastewater generated (2/1x100)	%			91.77	90.82	92.74	93.88	93.71
	Share of non-treated wastewater in the total volume of wastewater generated by:								
4	Households	%			6.91	7.53	7.37	6.90	6.72
5	Agriculture, forestry and fishing (ISIC 01-03)	%							
6	Manufacturing (ISIC 10-33)	%			2.04	1.82	1.19	1.00	0.72
7	Electricity industry (ISIC 351)	%			81.87	80.35	82.20	83.77	84.58
8	Other economic activities	%			0.95	1.12	1.98	2.21	1.69

Note: Wastewater treatment is the process of removing contaminants or organic material from wastewater and household sewage (including water from swimming pools etc.) by means of physical, chemical and biological processes like dilution, screening, filtering, sedimentation etc.

Explanation on data in table 2 (points 4-8)

We would like to notice that share of non-treated wastewater in the total volume of wastewater generated by households is estimation. Estimation SORS was done because of his survey into the public sewage disposal only data on total waste water from households, not available with the information as from the purified waste water.
Because manufacturing industry (ISIC 10-33) and electricity industry (ISIC 351) also abstracted water from water supply industry (ISIC 36) we have case that wastewater bigger in that section, then water abstracted which we show in table W2: Freshwater Abstraction in UNSD/UNEP Questionnaire 2010 on Environmental statistics - Water section.

Table 3. Forest and other wooded land: *Serbia*

Line	Category	Unit	2000	2005	2009
1	Forest	1'000 ha	2266	2345	2345
1a	of which protected [2]	%	18	17.5	17.5
2	Other wooded land	1'000 ha	565	574	574
2a	of which protected	%	. . .	. . .	. . .
3	Total forest and other wooded land (1+2)	1'000 ha	2831	2919	2919
4	Share of forest and other wooded land in total land area	%	38	39	39
5	Growing stock composition of forest	M^3 per ha	2.65	2.65	2.65
5a	o **Coniferous**	**1000 m^3**	. . .	. . .	**44 557** [1]
5b	o **Broadleaved**	**1000 m^3**	. . .	. . .	**317 930** [1]
5c	o Growing stock of the 10 most common species				
	Beech (Fagus sp.)	1000 m^3	. . .	. . .	146 851 [1]
	Oak (Quercus cerris)	1000 m^3	. . .	. . .	46 980 [1]
	Oak (Quercus petraea)	1000 m^3	. . .	. . .	21 543 [1]
	Oak (Quercus farnetto)	1000 m^3	. . .	. . .	20 986 [1]
	Spruce (Picea sp.)	1000 m^3	. . .	. . .	18 810 [1]
	Hornbeam (Carpinus sp.)	1000 m^3	. . .	. . .	15 157 [1]
	Austrian Pine (Pinus nigra)	1000 m^3	. . .	. . .	12 659 [1]
	Black Locust (Robinia pseudoacacia)	1000 m^3	. . .	. . .	11 244 [1]
	Pedunculate Oak (Quercus robur)	1000 m^3	. . .	. . .	9 242 [1]
	Fir (Abies sp.)	1000 m^3	. . .	. . .	8 305 [1]
	Remaining	**1000 m^3**	. . .	. . .	50 710 [1]
6	Protective forests	km^2 or 1'000 ha	. . .	. . .	. . .

Line	Category	Unit	2000	2005	2009
7	Share of protective forests in total forest and other land (% of 3)	%	. . .	. . .	. . .
8	Share of forest and other wooded land under a management plan or equivalent (% of 3)	%	. . .	. . .	. . .
9	Area of regeneration	1'000 ha	2.6	2.7	2.2
10	*Naturalness* of *forest and other wooded land*				
10a	o Undisturbed by humans	1'000 ha	1.2	1.2	1.2
10b	o Semi-natural	1'000 ha	2076	2084	2090
10c	o Plantation	1'000 ha	175	175	180

1) Data refer to 2007. and are taken from the Ministry of agriculture, forestry and water management – Administration for forest.
Data are published in statistical publication "Forestry bulletin"
*   * or data of the recent year after 2005*
2) Given percents includes protected forest and other wooded land together, because we do not have available data for these categories separately.

Table 4. Energy intensity: *Serbia*

Line	Category	Unit	2003	2004	2005	2006	2007	2008	2009
	Inland consumption of energy by category:								
1	solid fuels	1000 tonnes of oil equivalent (ktoe)	6510,00	7065,00	7250,83	7999,10	8268,00	8256,47	8239,96
2	oil	ktoe	3580,00	4025,00	4252,42	3880,00	5104,00	4321,86	3868,94
3	*gas*	ktoe	1770,00	2045,00	2023,89	1869,95	1875,00	1952,85	1592,98
4d	nuclear	ktoe	0	0	0	0	0	0	0
5e	renewables	ktoe	20,00	21,00	-59,08	-23,13	-7,00	6,31	-123,97
6	*Gross Inland consumption (1+2+3+4+5)*	ktoe	870,00	956,00	1022,63	938,00	1029,00	1179,48	1277,50
	Gross domestic product (GDP):								
7	at **2002** market prices in the national currency	**Million RSD**	996403,6	1079044,2	1139590,6	1198964,9	1281694,8	1352418,0	
8	at 2000 market prices in USD	mln USD	/	/	/	/	/	/	
9	in USD in PPP	mln USD	0,006	0,008	0,008	0,009	0,011	0,012	
	Energy intensity								
10	at **2002** market prices in the national currency (6/7)	ktoe/1'000 **RSD**	12,796	13,078	12,716	12,230	12,693	11,590	
11	at 2000 market prices in USD (6/8)	ktoe/1'000 USD	/	/	/	/	/	/	
12	in USD in PPP (6/9)	ktoe/ mln USD	2125000	1764000	1811335,4	1629323,8	1479000	1306214,4	

Note: For individual categories see, for instance, *Energy Statistics Manual*, OECD/IEA/Eurostat, 2007 (http://www.iea.org/textbase/nppdf/free/2005/statistics_manual.pdf)

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Table 5. Composition of road motor vehicle fleet by fuel type: *Serbia*

Line	Category	Unit	2003	2004	2005	2006	2007	2008	2009
	Passenger cars [1]	Number of vehicles	1404216	1466305	1497418	1526946	1491216	1500182	1650477
1	**Total (1a(i)+1b(i)+1c(i)+1d(i) +1e(i)+1f(i))**	Million vehicle kilometres	3865	3676	4820	5480	4456	4456	4582
1a	Petrol								
1a(i)	Number	Million vehicle kilometres							
1a(ii)	Share of **1**	%							
1b	Diesel [2]	Consumption of disel in thous. tons	61	60	70	76	81	85	88
1b(i)	Number	Million vehicle kilometres							
1b(ii)	Share of **1**	%							
1c	Gas								
1c(i)	Number	Million vehicle kilometres							
1c(ii)	Share of **1**	%							
1d	Electricity								
d(i)	Number	Million vehicle kilometres							
1d(ii)	Share of **1**	%							
1e	Biofuel								
1e(i)	Number	Million vehicle kilometres							
1e(ii)	Share of **1**	%							
1f	Other fuel								
1f(i)	Number	Million vehicle kilometres							
1f(ii)	Share of **1**	%							
	Buses and motor coaches [1]	Number of vehicles	9144	9125	9696	9312	8887	8557	8853
2	**Total (2a(i)+2b(i)+2c(i)+2d(i) +2e(i) +2f(i))**	Million vehicle kilometres	164	161	175	169	206	198	191

Line	Category	Unit	2003	2004	2005	2006	2007	2008	2009
2a	Petrol								
2a(i)	Number	Million vehicle kilometres							
2a(ii)	Share of **2**	%							
2b	Diesel [2]	Consumption of diesel in thous.tons	66	65	70	73	73	85	88
2b(i)	Number	Million vehicle kilometres							
2b(ii)	Share of **2**	%							
2c	Gas								
2c(i)	Number	Million vehicle kilometres							
2c(ii)	Share of **2**	%							
2d	Electricity [3]	Consumption of electricity in thous. MWh	53	45	47	45	41	45	45
2d(i)	Number	Million vehicle kilometres							
2d(ii)	Share of **2**	%							
2e	Biofuel								
e(i)	Number	Million vehicle kilometres							
2e(ii)	Share of **2**	%							
2f	Other fuel								
2f(i)	Number	Million vehicle kilometres							
2f(ii)	Share of **2**	%							
	Trolleybuses[1]		126	128	129	143	139	125	129
3	**Total**	Million vehicle kilometres							
	Motorcycles and mopeds [1]	Number of vehicles	13287	14771	16042	20380	24897	31803	34500
4	**Total**	Million vehicle kilometres							
	Goods vehicles [1]	Number of vehicles	126146	136925	144662	153543	155679	163500	171807
5	**Total (5a(i)+5b(i)+5c(i)+5d(i)**	Million vehicle kilometres	41	34	46	83	113	87	96

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
	+5e(i)+5f(i))														
5a	Petrol														
5a(i)	Number	Million vehicle kilometres													
5a(ii)	Share of **5**	%													
5b	Diesel														
5b(i)	Number	Million vehicle kilometres													
5b(ii)	Share of **5**	%													
5c	Gas														
5c(i)	Number	Million vehicle kilometres													
5c(ii)	Share of **5**	%													
5d	Electricity														
5d(i)	Number	Million vehicle kilometres													
5d(ii)	Share of **5**	%													
5e	Biofuel														
5e(i)	Number	Million vehicle kilometres													
5e(ii)	Share of **5**	%													
5f	Other fuel														
5f(i)	Number	Million vehicle kilometres													
5f(ii)	Share of **5**	%													
	Other motorised vehicles [1]	Number of vehicles	219369		225877		230100		233740		112704		36663		37386
6	**Total (6a(i)+6b(i)+6c(i)+6d(i) +6e(i)+6f(i))**	Million vehicle kilometres													
6a	Petrol														
6a(i)	Number	Million vehicle kilometres													

Line	Category	Unit	2003		2004		2005		2006		2007		2008		2009
6a(ii)	Share of **6**	%													
6b	Diesel														
6b(i)	Number	Million vehicle kilometres													
(ii)	Share of **6**	%													
6c	Gas														
6c(i)	Number	Million vehicle kilometres													
6c(ii)	Share of **6**	%													
6d	Electricity														
6d(i)	Number	Million vehicle kilometres													
6d(ii)	Share of **6**	%													
6e	Biofuel														
6e(i)	Number	Million vehicle kilometres													
6e(ii)	Share of **6**	%													
6f	Other fuel														
6f(i)	Number	Million vehicle kilometres													
6f(ii)	Share of **6**	%													
	Bicycles														
7	**Total**	Million vehicle kilometres													

[1] Next to the category for transport (passenger cars, buses and motor coaches, trolleybus, motorcycles and mopeds, goods vehicles and other motor vehicles) are given numbers of vehicles.
[2] In row for Diesel are given data for consumption of that fuel in thousand of tons
[3] In row for Electricity are given data for consumption of electricity in thousand of tons.