

# **CORE SET OF ENVIRONMENTAL INDICATORS FOR EASTERN EUROPE, THE CAUCASUS AND CENTRAL ASIA<sup>1</sup>**

## **Introduction**

This core set of environmental indicators could be helpful for countries of Eastern Europe, the Caucasus and Central Asia (EECCA) in improving environmental reporting at the national level and in harmonizing their environmental assessments with those of EEA countries. Use of this indicator set in the EECCA countries would also facilitate data gathering for future regional environmental reports to be prepared for the “Environment for Europe” Ministerial Conferences.

At a workshop held outside St Petersburg (Russian Federation) on 27-28 June 2003, EECCA national experts identified priority themes – environmental issues, areas of environmental policy and economic sectors – for this core set of environmental indicators. These are the following:

1. Air
2. Climate change
3. Waste
4. Water
5. Biodiversity
6. Land resources and soils

- I. Agriculture
- II. Energy
- III. Transport

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<sup>1</sup> Prepared with the assistance of Ms. Lyubov Gornaya, UNECE consultant, and the Scientific Production Association “Typhoon”, Russian Federation, and in co-operation with the European Environment Agency. This document was not formally edited.

The 356 indicators in the EEA's preliminary core set of environmental indicators were used as a starting point.<sup>2</sup> Based on these, EECCA experts selected **118 indicators** as being most suitable for their countries. A preliminary core set of indicators was prepared on this basis. On returning home, national experts participating in the St Petersburg Workshop, with the assistance of local specialists, evaluated the proposed indicators using seven criteria and an agreed evaluation procedure.

### **Criteria for selection of the core set of environmental indicators**

1. Relevance to national environmental priorities: indicators were assessed in terms of their relevance to the goals and objectives of national strategy documents on environmental protection and management of natural resources (national strategies of environmental protection, sustainable development, biodiversity, national action plans and other guidelines).
2. Relation to international environmental policy: indicators were assessed in terms of their relation to the implementation of international agreements, to international obligations and to their comparability at international level (in particular in the pan-European process).
3. Role as a means of communication for public awareness: indicators were assessed by their clarity for general public and ability to raise awareness about the state of the environment.
4. Measurability: indicators were assessed in terms of the availability of cost-effective methods and methodologies for the data necessary (measurements and/or calculations).
5. Availability of time series (regular data flows): indicators were assessed by availability of long-term data and primary information for establishing trends.
6. Predictive ability: indicators were assessed in terms of their capacity to track the effectiveness of pursued environmental policy.
7. Priority: indicators were assessed by their relative importance compared to other indicators for each specific environmental problem (or sub-problem) or environmental policy, with a view to restricting the number of indicators referring to the same problem or issue and reducing the total number of indicators.

### **Evaluation procedure**

The proposed set of indicators was assessed with respect to each criterion using a four point system:

- 0-no
- 1-weak level
- 2- medium level
- 3-high level.

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<sup>2</sup> The indicators presented in EEA Technical report *EEA core set of indicators. Revised version. April 2003. Adopted version for EECCA countries May 2003. Compiled by Peter Kristensen. April 2003. Project Managers: Anita Pirc-Velkavrh & Peter Kristensen. EEA served as a basis for this selection.*

## Evaluation results

The scores received from the experts of 11 countries (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Turkmenistan, Uzbekistan and Ukraine) were processed as follows.

- First, for each indicator an arithmetical mean of the sum of scores by six criteria (1, 2, 3, 4, 6 and 7) was calculated for all eleven countries. In some cases, however, scores were zero, in particular when an indicator or issue (sub-issue) described by such an indicator is non-existent in a country (say, “sea level rise” for Belarus, Kyrgyzstan and Republic of Moldova, or “snow cover” for Turkmenistan and Uzbekistan), or for other unknown reasons. To eliminate the influence of these scores, an arithmetical mean of summary scores other than zeros by six criteria was calculated. Using the derived means, a ranking of environmental indicators by specific theme or section was possible.
- Second, the arithmetical mean of the sums of scores for criterion 5 – “availability of data time series” – was determined for ten countries (Uzbekistan was not included, as here indicators were not evaluated for this criterion). Scores for were used to categorize indicators in terms of the feasibility of their implementation feasibility in the short-, medium- and long-term.

The resulting core set of environmental indicators for the EECCA countries, with the processed results of expert scores, are summarized in the table provided in the Annex. Work on the core set of environmental indicators should be continued by means of, in particular, creating information sheets (certificates) which include detailed descriptions of each indicator, data sets required, methods of data collection, monitoring systems used for data collection as well as environmental standards or policy targets to be used for comparison.

## Trial compendium

To test the utility of the core set of indicators for the EECCA countries, the UNECE Secretariat prepared a trial compendium, gathering data for 30 indicators from the core set and using these indicators to describe interrelations between, on the one hand, economic and sectoral policies, and, on the other, environmental policy. The compendium includes in particular indicators whose overall weighted mean is higher than 12.5 and whose mean estimate for the criterion “availability of data time series” is more than 2.0: i.e., indicators that can implemented in the short-term. Table 1 (below) lists these environmental indicators and their scores. (For more information, see the *Trial compendium of environmental indicators in Eastern Europe, Caucasus and Central Asia*, also in this CD package.)

**Table 1. Environmental indicators for a pilot compendium of EECCA countries**

Issue or policy area	EEA code, subcode	Indicator name	Mean score for criteria 1, 2, 3, 4, 6 and 7	Mean score for criterion 5
Air-pollution	APE1 rev	Total emissions of acidifying pollutants (SO <sub>2</sub> , NO <sub>x</sub> ) from stationary and mobile sources (total and by sector)	15,2	2,5
	APE5b	Energy related SO <sub>2</sub> emissions	14,7	2,3
	APE6b	Energy related NO <sub>x</sub> emissions	14,6	2,2
	APE5a rev	Emissions SO <sub>2</sub> from stationary and mobile sources (total and by sector)	14,5	2,2
	APE9c	Energy-related particulate emissions	14,5	2,0
	APE6a rev	Emissions NO <sub>x</sub> from stationary and mobile sources (total and by sector)	14,0	1,8
	APE4a rev	Transport emissions (NO <sub>x</sub> , NMVOCs, PM10, SO <sub>2</sub> )	13,9	2,0
	APE9a rev	Emissions PM10 from stationary and mobile sources (total and by sector)	13,7	2,2
	APE8a rev	Emissions NMVOCs from stationary and mobile sources (total and by sector)	12,3	1,7
Climate change	CC1 rev	Greenhouse Gas Emissions vs. targets (if established)	14,9	1,7
Water	WQ2e new	Total water consumption, including by mode	14,6	2,3
	WQ1a rev	Freshwater resources (surface and groundwater)	14,3	2,5
	WQ1b	Total water abstraction	13,9	2,0
	WQ2c	Water use by households	14,1	2,1
	WQ2a	Water use by agriculture	13,6	2,1
	WQ2f new	Domestic water exploitation index (per capita)	13,2	1,9
	WEU10 rev	Drinking water quality (proportion of samples failing the standard)	13,5	2,3
	WQ2b	Water use by industry	12,5	2,1
	WEU8 rev	Emissions of organic matter by BOD	12,7	1,9
Biodiversity	BDIV10a rev	Cumulated area of designated areas	14,7	2,5
	BDIV2d	Tree species composition in forests	13,9	1,7
Agriculture	AGRI7	Fertiliser consumption	12,3	1,6
Energy	EE24	Total energy consumption by fuel	12,6	2,0
	EE20	Total energy intensity (energy consumption per unit of GDP)	12,0	2,1
Transport	TERM12 rev	Passenger transport demand by mode	10,7	2,0
	TERM13 rev	Freight transport demand by mode	10,6	1,9
Waste	WMF5a	Total generation of waste	14,2	1,6
	WMF13 rev	Generation of hazardous (toxic) waste	13,7	1,7
	WMF7	Generation of industrial waste	13,5	2,0
	WMF5b	Waste intensity (total waste generated per unit of GDP)	13,1	1,3

Based on data recently collected, environmental indicators have been calculated for six interested EECCA countries: Azerbaijan, Belarus, Georgia, Kyrgyzstan, Tajikistan and the Russian Federation. Results were presented at a joint workshop of UNECE and EEA in November 2003 in Geneva (see the *Trial compendium of environmental indicators in Eastern Europe, Caucasus and Central Asia*).

# Annex

## CORE SET OF ENVIRONMENTAL INDICATORS FOR EASTERN EUROPE, THE CAUCASUS AND CENTRAL ASIA AND EVALUATION OF THE INDICATORS BY THE COUNTRIES

				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Air - pollution	APE		Emissions of air pollutants																									
Air - pollution	APE1 rev		Total emissions of acidifying pollutants (SO <sub>2</sub> , NO <sub>x</sub> ) from stationary and mobile sources (total and by sector)	14	17	14	18	15	15	16	16	8	18	16	15.2	15.2	2	3	3	3	3	3	2	3	2		1	2.5
Air - pollution		APE5b	Energy related SO <sub>2</sub> emissions	14	12	14	18	15	13	15	17	11	18	15	14.7	14.7	2	2	3	3	3	2	2	3	1		2	2.3
Air - pollution		APE6b	Energy related NO <sub>x</sub> emissions	15	11	14	18	15	12	15	17	11	18	15	14.6	14.6	3	1	3	3	2	2	2	3	1		2	2.2
Air - pollution		APE5a rev	Emissions of SO <sub>2</sub> from stationary and mobile sources (total and by sector)	16	12	12	18	15	15	12	18	8	18	16	14.5	14.5	3	2	2	3	2	3	1	3	2		1	2.2
Air - pollution		APE9c	Energy-related particulate emissions	18	16	9	18	14	16	12	16	0	10	16	13.2	14.5	3	1	2	3	2	3	2	3	0		1	2.0
Air - pollution		APE7a	Emissions of NH <sub>3</sub> (total & by sector)	14	16	7	18	11	13	0	14	0	18	16	11.5	14.1	2	3	1	3	1	1	0	3	0		1	1.5

				Total score by 6 criteria														Availability of time series										
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Air - pollution		APE6a rev	Emissions of NOx from stationary and mobile sources (total & by sector)	15	11	12	0	15	15	12	18	8	18	16	12.7	14.0	3	2	2		2	2	1	3	2		1	1.8
Air - pollution		APE10a new	Emissions of selected heavy metals (mercury, lead, cadmium) (total and by sector)	17	16	11	16	14	13	0	13	0	10	16	11.5	14.0	2	3	1	1	1	2	0	2	0		0	1.2
Air - pollution		APE4a rev	Transport air emissions (NO <sub>x</sub> , NMVOC, PM, SO <sub>2</sub> )	16	13	11	18	15	16	13	16	8	10	17	13.9	13.9	1	2	2	3	2	3	1	3	2		1	2.0
Air - pollution		APE9a rev	Emissions of PM10 from stationary and mobile sources (total & by sector)	18	16	10	18	14	17	11	15	6	10	16	13.7	13.7	3	3	2	3	2	3	2	2	1		1	2.2
Air - pollution		APE7b	Agriculture ammonia emissions	14	16	9	17	11	13	0	8	0	10	15	10.3	12.6	2	0	1	3	1	1	0	1	0		2	1.1
Air - pollution		APE8a rev	Emissions of NMVOC from stationary and mobile sources (total & by sector)	10	15	10	17	15	14	8	14	6	10	16	12.3	12.3	1	0	2	3	2	2	2	3	1		1	1.7
Air - pollution		APE10b new	Emissions of selected POPs (PCBs, dioxins, furans, benzo(a)pyrene) (total and by sector)	10	12	7	17	13	13	6	14	0	10	16	10.7	11.8	1	0	0	2	0	2	1	1	0		0	0.7

				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Air - pollution		APE6c rev	Emissions intensity of NO <sub>x</sub> from power production	15	11	6	15	15	7	12	10	0	0	14	9.5	11.7	3	1	0	0	2	1	2	1	0		2	1.2
Air - pollution		APE5c rev	SO <sub>2</sub> emissions intensity from power production	9	11	6	18	15	8	12	10	0	0	14	9.4	11.4	1	2	0	3	3	1	2	1	0		2	1.5
Air - pollution		APE8b	Intensity of energy related NMVOC emissions	10	15	0	18	15	9	4	7	6	10	16	10.0	11.0	1	0	0	3	2	2	1	1	1		1	1.2
Air - pollution		APE4b rev	Emissions intensity for NO <sub>x</sub> , PM10, SO <sub>2</sub> , NMVOCs by transport mode	6	12	5	8	15	5	4	5	6	10	13	8.1	8.1	0	2	0	0	2	1	1	0	2		0	0.8
Air - pollution	APQ		Human exposure to air quality exceedance																									
Air - pollution		APQ11b rev	Exceedance days of NO <sub>2</sub> target in urban areas with regular observations	18	18	18	18	15	6	12	16	0	10	15	13.3	14.6	3	3	3	3	2	1	2	3	0		0	2.0
Air - pollution		APQ11c rev	Exceedance days of PM10 target in urban areas with regular observations	18	18	18	18	15	6	12	16	0	10	15	13.3	14.6	3	3	3	3	2	1	2	3	0		0	2.0

				Total score by 6 criteria														Availability of time series										
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Air - pollution		APQ11e rev	Exceedance days of CO target in urban areas with regular observations	18	18	18	18	15	6	12	16	0	10	15	13.3	14.6	3	3	3	3	2	1	2	3	0		0	2.0
Air - pollution		APQ11a rev	Exceedance days of SO <sub>2</sub> target in urban areas with regular observations	17	18	18	18	16	6	12	16	0	10	15	13.3	14.6	2	3	3	3	2	1	2	3	0		0	1.9
Air - pollution		APQ11g rev	Urban population exposed to air quality exceedances (e.g. multiplicity of maximum permissible concentration (MPC) or air pollution index)	18	18	16	18	15	6	15	15	0	10	15	13.3	14.6	3	2	3	3	1	1	3	3	0		0	1.9
Air - pollution	APM		Effect of measures on past trends																									
Air - pollution		APM14a	Effect on emissions of SO <sub>2</sub> and NO <sub>x</sub>	16	16	18	18	14	6	11	16	6	18	13	13.8	13.8	3	1	2	3	1	1	1	2	1		1	1.6
Air – ozone depletion	OD		Ozone depleting substances																									
Air - ozone depletion	OD2		Sales/Consumption of ODP	16	14	12	18	15	17	10	7	12	18	13	13.8	13.8	2	1	2	3	1	2	1	1	2		2	1.7



				Total score by 6 criteria														Availability of time series											
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	
Air - ozone depletion	OD1		Production of ODP	10	14	0	0	0	6	10	13	0	18	15	7.8	12.3	1	1	0		0	0	1	2	0		3	0.8	
Climate change	CC		Climate change																										
Climate change		CC6a	Precipitation	18	16	18	18	15	15	17	18	11	0	15	14.6	16.1	3	3	3	3	3	2	3	3	2		3	2.8	
Climate change		CC7c	Snow cover	11	16	17	18	16	12	17	18	0	0	14	12.6	15.4	1		3	3	3	2	3	3	0		3	2.1	
Climate change	CC1 rev		Greenhouse Gas (GHG) Emissions vs targets (if established)	17	16	15	18	16	13	14	12	12	18	13	14.9	14.9	2	1	2	3	3	1	2	2	0		1	1.7	
Climate change	CC2 rev		Projected GHG emissions in 2010 vs targets (if established)	18	17	15	15	15	13	14	13	12	18	13	14.8	14.8	3		2	1	2	1	2	2	0		1	1.4	
Climate change		CC10a	Annual river discharge	18	16	18	16	18	6	13	18	12	12	12	14.5	14.5	3	1	3	3	3	1	2	3	2		3	2.4	
Climate change		CC5b	GHG emissions of key source sectors (energy, transport, industry, agriculture, waste)	18	14	15	18	16	13	15	7	12	18	13	14.5	14.5	3	0	2	3	2	2	2	1	0		1	1.6	
Climate change		CC8b	Forest growth	18	13	10	18	15	12	15	15	12	0	15	13.0	14.3	3	2	2	3	2	2	2	3	1		3	2.3	
Climate change		CC5a	Emissions of carbon dioxide (CO <sub>2</sub> ) and non-CO <sub>2</sub> (N <sub>2</sub> O, CH <sub>4</sub> , fluorinated gases)	18	14	15	18	16	4	15	13	12	18	13	14.2	14.2	2	0	2	3	2	0	2	2	0		1	1.4	
Climate change		CC11a	Sea level rise	9	17	0	18	16	0	0	18	6	10	7	9.2	12.6	2	3	0	3	3	0	0	3	1		0	1.5	

				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Climate change		CC7a	Mountain glaciers (extent and mass-balance)	10	16	0	0	16	13	0	7	0	0	13	6.8	12.5	1		0		2	2	0	2	0		2	0.9
Climate change		CC9a	Growing season length	16	6	17	16	13	6	14	9	12	12	7	11.6	11.6	2	1	3	2	3	1	2	3	1		0	1.8
Water	WQ		Water quantity																									
Water		WQ2e new	Total water consumption, including by mode	17	13	16	14	18	12	14	16	10	18	13	14.6	14.6	2	2	3	3	3	2	2	3	2		1	2.3
Water		WQ1a rev	Freshwater resources (surface and groundwater)	18	15	13	14	16	12	12	17	10	18	12	14.3	14.3	3	3	3	3	2	2	2	3	2		2	2.5
Water		WQ2c	Water use by households	17	12	15	13	16	13	14	14	10	18	13	14.1	14.1	3	2	2	1	2	2	2	3	2		2	2.1
Water		WQ1b	Total water abstraction	14	16	13	14	0	13	13	16	10	18	12	12.6	13.9	3	1	2	3		2	2	3	2		2	2.0
Water		WQ2a	Water use by agriculture	16	12	13	14	16	13	13	12	10	18	13	13.6	13.6	2	2	2	2	2	2	2	3	2		2	2.1
Water		WQ2f new	Household water consumption	17	12	15	14	16	12	11	14	5	18	11	13.2	13.2	2	1	3	2	2	2	2	2	1		2	1.9
Water	WQ4		Overall reservoir stocks	15	14	13	11	15	12	8	12	10	18	12	12.7	12.7	3	2	3	3	2	2	1	3	2		2	2.3
Water		WQ2b	Water use by industry	13	10	12	8	16	13	12	12	10	18	13	12.5	12.5	2	2	3	1	2	2	2	3	2		2	2.1
Water		WQ1c	Water exploitation rate	17	6	12	0	16	12	12	7	0	0	12	8.5	11.8	2	1	2		2	2	2	1			2	1.4

				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Water	WQ7		Water leakage	16	7	15	8	15	10	6	14	10	10	13	11.3	11.3	2	1	2	2	2	1	2	3	2		2	1.9
Water	WQ5 rev		Water prices (rates) by users	12	11	15	11	10	10	12	9	6	0	13	9.9	10.9	3	2	2	1	1	1	2	1	1		2	1.6
Water	WQ6 rev		Share of reused water	16	9	10	8	11	10	8	14	10	10	13	10.8	10.8	2	1	3	2	1	1	2	3	2		2	1.9
Water	WEU		Nutrient and organic water pollution																									
Water	WEU10 rev		Drinking water quality (proportion of samples failing the standard)	18	18	9	16	16	13	7	17	9	0	12	12.3	13.5	3	3	3	2	2	2	2	3	2		1	2.3
Water	WEU8 rev		Emissions of organic matter by BOD	15	14	9	16	13	11	10	13	0	0	13	10.4	12.7	2	3	3	2	2	1	2	3	0		1	1.9
Water	WEU4		Nutrients in coastal waters	0	13	0	15	10	0	0	13	10	18	9	8.0	12.6	0	0	0	1	1	0	0	3	2		1	0.8
Water	WEU5		BOD and ammonium in rivers	13	15	9	16	13	9	12	12	10	18	9	12.4	12.4	2	3	3	2	2	1	2	3	2		1	2.1
Water	WEU2 rev		Nutrients (nitrates and phosphates) in rivers	15	16	7	10	15	9	11	14	10	18	9	12.2	12.2	2	3	0	1	2	1	2	3	2		1	1.7
Water	WEU9 rev		Emissions of nutrients (nitrates and phosphates) from UWWT plants	18	13	9	12	14	11	9	10	0	18	8	11.1	12.2	2	1	3	1	2	1	2	2	0		1	1.5

				Total score by 6 criteria														Availability of time series										
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Water	WEU16 rev		Proportion of untreated urban waste water in total waste water discharge	15	8	18	13	6	11	8	17	10	0	13	10.8	11.9	2	1	3	2	1	2	2	3	2		2	2.0
Water	WEU1		Nitrates in groundwater	11	12	16	10	15	10	10	13	6	18	9	11.8	11.8	1	3	2	1	1	1	2	3	1		1	1.6
Water	WEU12		Eutrophication indicators (chlorophyll, Secchi depth) in lakes	17	10	9	9	10	0	5	15	0	18	13	9.6	11.8	3	1	3	1	1	0	1	3	0		2	1.5
Water	WEU3		Phosphorus in lakes	15	15	7	6	11	0	6	11	9	18	9	9.7	10.7	2	2	0	0	1	0	1	2	1		1	1.0
Water	WHS		Hazardous substances in water																									
Water	WHS4 rev		Hazardous substances in coastal and marine waters	0	16	0	14	8	0	0	15	10	18	12	8.5	13.3	0	3	0	1	1	0	0	3	2		1	1.1
Water	WHS8		Emissions to water of hazardous substances from industry	16	15	17	7	11	12	10	15	9	18	10	12.7	12.7	2	2	2	0	2	2	1	3	2		1	1.7
Water	WHS11		Accidental oil spills from marine shipping	0	15	0	14	14	0	0	12	11	13	10	8.1	12.7	0	2	0	2	2	0	0	2	2		1	1.1
Water	WHS2 rev		Hazardous substances in rivers (according to UNECE convention on transboundary waters)	11	16	15	9	11	11	10	14	0	18	11	11.5	12.6	1	2	3	1	0	1	2	2	0		1	1.3
Water	WHS9		Emissions to water of hazardous substances from urban waste water treatment plants	16	13	15	7	11	12	10	11	0	18	12	11.4	12.5	2	1	2	0	2	2	1	2	0		1	1.3

				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Water	WHS12		Illegal discharges of oil at sea	0	17	0	14	12	0	0	12	9	0	11	6.8	12.5	0	2	0	2	1	0	0	2	2		1	1.0
Water	WHS3 rev		Hazardous substances in lakes (according to UNECE convention on transboundary waters)	18	16	15	9	9	11	5	14	0	10	11	10.7	11.8	2	3	3	1	1	1	1	2	0		1	1.5
Water	WHS7		Loads of hazardous substances to coastal waters	0	12	0	14	8	0	0	14	9	10	11	7.1	11.1	0	3	0	1	1	0	0	3	2		1	1.1
Water		WHS1a	Pesticides in groundwater	12	13	12	7	11	11	7	10	6	18	9	10.5	10.5	2	2	1	0	1	1	2	2	1		1	1.3
Water		WHS1b	Other hazardous substances in groundwater	11	13	11	7	11	11	8	5	6	10	9	9.3	9.3	1	3	1	0	1	1	2	1	1		1	1.2
Water	WEC		Ecological quality																									
Water		WEC4e rev	Classification of rivers (by water pollution index)	18	16	16	12	15	0	15	12	10	18	13	13.2	14.5	3	2	2	1	2	0	2	3	2		1	1.8
Water	WEC6 rev		Quality of marine waters (by water pollution index)	0	15	0	13	15	0	0	12	10	18	13	8.7	13.7	0	2	0	1	2	0	0	3	2		1	1.1
Water		WEC5e rev	Classification of lakes (by water pollution index)	18	15	16	12	13	0	8	12	10	18	13	12.3	13.5	3	2	2	1	2	0	1	3	2		1	1.7
Terrestrial	TEP		Soil pollution																									
Terrestrial	TEP3		Pesticide soil contamination	18	16	12	12	0	6	10	13	9	18	13	11.5	12.7	2	2	2	1		0	2	3	2		1	1.5

				Total score by 6 criteria														Availability of time series										
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Terrestrial	TES		Soil erosion																									
Terrestrial		TES1b rev	Proportion of agricultural land under risk of wind erosion and scouring	17	17	12	15	12	14	11	12	9	18	13	13.6	13.6	2	3	1	3	1	1	2	3	2		1	1.9
Terrestrial		TES1a	Loss of organic matter in top soils	14	15	13	16	13	11	15	8	0	15	9	11.7	12.9	2	3	2	3	1	1	2	1	0		1	1.6
Terrestrial	TEL		Land use and land cover changes																									
Terrestrial	TELC4		Agriculture land cover changes	14	6	15	11	15	12	13	11	10	18	10	12.3	12.3	2	1	2	2	2	1	2	2	2		1	1.7
Terrestrial		TELC3a	Land take by transport infrastructure	15	5	6	9	11	11	8	7	10	12	10	9.5	9.5	3	0	2	2	1	1	2	1	2		2	1.6
Terrestrial	TEU		Urban environment																									
Terrestrial	TEU1 rev		Urban sprawl change	16	6	11	0	12	12	11	8	12	14	7	9.9	10.9	3	1	2		1	1	2	2	2		1	1.5
Biodiversity	BDIV		Habitats and biodiversity																									
Biodiversity		BDIV10a rev	Cumulated area of designated areas	13	16	16	17	13	15	11	18	12	18	13	14.7	14.7	2	3	2	3	3	2	2	3	2		3	2.5
Biodiversity		BDIV1d	Naturalness of forests	17	15	17	13	15	13	18	17	10	0	11	13.3	14.6	3	2	3	2	2	1	3	3	2		1	2.2

				Total score by 6 criteria													Availability of time series											
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Biodiversity		BDIV2d	Tree species composition in forests	15	13	11	16	15	12	14	16	12	18	11	13.9	13.9	2	2	2	3	2	2	3	3	2		1	2.2
Biodiversity		BDIV8a	Proportion of globally threatened fauna species protected by European Conventions	15	13	17	12	11	8	15	17	0	18	12	12.5	13.8	2	2	2	3	1	1	2	3	0		1	1.7
Biodiversity		BDIV3e	Threatened forest species	16	14	15	18	6	10	13	16	12	18	12	13.6	13.6	3	1	2	3	1	2	2	3	2		1	2.0
Biodiversity		BDIV2a rev	Flora and fauna species richness in proportion to surface area of the countries	13	15	8	17	15	13	12	10	0	18	11	12.0	13.2	2	2	1	3	2	1	1	2	0		1	1.5
Biodiversity		BDIV2g rev	Trends of species groups (carnivores, raptors, ..., species of economic interest)	11	16	13	14	15	7	12	17	6	18	12	12.8	12.8	2	2	2	2	2	1	2	3	1		1	1.8
Biodiversity		BDIV3a	Number of threatened taxa occurring at different geographical levels	17	16	5	14	11	7	11	12	0	18	12	11.2	12.3	3	1	1	2	1	2	2	2	0		1	1.5
Biodiversity		BDIV3b	Number of globally threatened species endemic to Europe	17	14	5	12	0	10	13	11	0	15	12	9.9	12.1	3	1	1	3		1	2	2	0		1	1.4
Biodiversity		BDIV9a	Total area of wetlands (and other ecosystems types) reclaimed by	9	16	14	0	14	7	12	14	6	0	12	9.5	11.6	1	2	1		2	0	2	3	1		1	1.3

				Total score by 6 criteria														Availability of time series										
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
			country, biogeographic region																									
Biodiversity		BDIV2f	Endemic species richness in proportion to surface area of biogeographic regions	17	12	0	11	13	15	8	6	6	14	11	10.3	11.3	3	2	0	2	1	2	2	2	1		1	1.6
Biodiversity		BDIV2e	Changes in species composition in wetlands	13	7	12	11	11	10	8	14	12	14	11	11.2	11.2	2	0	2	2	2	1	2	3	2		1	1.7
Agriculture	AGRI																											
Agriculture	AGRI1		Agriculture water consumption	11	14	14	14	0	12	11	16	9	18	12	11.9	13.1	3	1	1	3		2	2	3	2		2	1.9
Agriculture	AGRI7		Fertiliser consumption	14	10	15	13	0	7	10	15	10	18	11	11.2	12.3	1	0	3	2		2	2	3	2		1	1.6
Agriculture		AGRI8a	Use/consumption of pesticides	15	10	17	16	10	5	10	17	10	0	12	11.1	12.2	3	0	3	2	2	1	2	3	2		2	2.0
Energy	EE																											
Energy	EE15		Nuclear waste	9	15	0	17	17	9	9	18	10	0	14	10.7	13.1	3	1		2	3	2	2	3	2		2	2.0
Energy	EE24		Total energy consumption by fuel	18	10	7	11	18	18	11	11	10	0	12	11.5	12.6	3	2	0	2	3	3	2	2	2		1	2.0
Energy	EE20		Total energy intensity (energy consumption per unit of GDP)	16	8	10	13	16	6	12	17	0	0	10	9.8	12.0	3	2	3	2	3	1	2	3	0		2	2.1
Energy	EE18		Final energy consumption	15	11	8	11	17	6	12	11	0	0	11	9.3	11.3	3	2	3	2	3	1	2	2	0		1	1.9



				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Energy	EE28 rev		End-user (Final) energy prices (inclusive of taxes) by fuel	16	10	6	10	10	13	10	11	7	0	12	9.5	10.5	3	2	2	2	2	3	1	2	1		2	2.0
Energy	EE26		Renewable energy consumption	13	9	5	12	14	9	8	7	6	0	12	8.6	9.5	2	2	0	1	2	1	2	1	1		2	1.4
Energy	EE27		Share of renewable electricity in gross electricity consumption	9	9	5	12	13	10	7	7	6	0	12	8.2	9.0	1	0	0	1	2	2	2	1	1		2	1.2
Transport	TERM																											
Transport	TERM9		Number of transport accidents, fatalities and injured (land, air and maritime)	18	7	0	16	11	6	14	13	8	10	8	10.1	11.1	3	2		3	1	1	2	2	1		2	1.7
Transport	TERM32		Size and composition of vehicle fleet	15	10	11	10	13	6	12	13	9	12	8	10.8	10.8	3	2	2	2	3	1	2	3	1		0	1.9
Transport	TERM12 rev		Passenger transport demand by mode	15	10	10	10	16	6	12	9	10	12	8	10.7	10.7	2	2	2	2	3	1	2	2	2		2	2.0
Transport	TERM33		Average age of the vehicle fleet	13	10	12	10	12	6	13	13	9	12	8	10.7	10.7	3	2	2	2	3	1	2	3	1		0	1.9
Transport	TERM13 rev		Freight transport demand by mode	15	10	10	10	16	6	12	8	10	12	8	10.6	10.6	2	2	2	2	3	1	2	2	2		1	1.9
Transport	TERM20 rev		Transport prices	9	8	4	10	10	6	14	8	8	18	8	9.4	9.4	1	2	2	2	1	1	2	2	1		1	1.5

				Total score by 6 criteria													Availability of time series											
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Transport	TERM1 rev		Transport final energy consumption by mode	10	8	15	9	10	6	8	8	6	12	8	9.1	9.1	2	2	3	1	1	1	1	1			0	1.3
Waste	WMF																											
Waste		WMF5a	Total generation of waste	18	14	14	14	13	10	11	18	10	18	16	14.2	14.2	2	2	2	1	1	0	2	3	2		1	1.6
Waste	WMF13 rev		Generation of hazardous (toxic) waste	14	15	15	15	16	7	12	17	10	12	18	13.7	13.7	1	2	2	1	2	0	2	3	2		2	1.7
Waste	WMF7		Generation of industrial waste	18	15	14	12	12	7	15	15	10	12	18	13.5	13.5	3	3	2	1	2	0	2	3	2		2	2.0
Waste		WMF20a	Transboundary movements of hazardous waste	18	14	18	18	15	10	10	12	10	8	14	13.4	13.4	3	1	3	3	2	1	2	2	2		1	2.0
Waste		WMF16a	Waste disposal (total )	17	12	15	16	13	10	9	18	10	0	14	12.2	13.4	1	2	2	1	2	1	1	3	2		1	1.6
Waste		WMF5b	Waste intensity (total waste generated per unit of GDP)	18	14	12	14	9	10	8	16	0	14	16	11.9	13.1	2	2	2	1	1	0	1	3	0		1	1.3
Waste		WMF20b	Transboundary movements of total waste	18	14	13	18	0	10	8	12	10	0	14	10.6	13.0	3	1	3	3	0	1	2	2	2		1	1.8
Waste		WMF6a rev	Generation of municipal waste	17	10	16	15	9	7	11	14	10	12	16	12.5	12.5	3	1	2	2	1	0	2	3	2		1	1.7
Waste		WMF16b	Waste disposal by specific waste stream	12	11	15	14	13	10	10	11	10	0	16	11.1	12.2	1	1	2	1	2	1	1	2	2		1	1.4
Waste	WMF15		Waste recovery	12	10	18	0	12	7	9	14	10	0	15	9.7	11.9	0	0	3	0	2	0	2	2	2		1	1.2

				Total score by 6 criteria												Availability of time series												
Environmental issues and sectors	EEA code	EEA subcode	Indicator name	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean	Adjusted weighted mean	Armenia	Azerbaijan	Belarus	Georgia	Kazakhstan	Kyrgyzstan	Moldova	Russia	Turkmenistan	Uzbekistan	Ukraine	Estimated weighted mean
Waste		WMF17a rev	Land use for landfills, waste dumps, tailing pits, refuse heaps	17	9	16	16	8	10	9	12	10	8	14	11.7	11.7	3	2	3	2	1	1	2	2	2		1	1.9
Waste		WMF21a	Treatment capacity	17	11	17	0	9	7	7	8	0	0	14	8.2	11.3	3	1	3	0	2	0	1	1	0		1	1.2

Notes:

‘rev’-indicator name has been corrected making it more realistic in terms of conditions of EECCA countries;

‘new’ – new indicator added by experts of EECCA countries.