

# Agenda Item 5: Review of the Guidelines for the Application of Environmental Indicators



**Indicator A1 – Emissions of pollutants into the atmospheric**  
Country data sources, collection, experiences and  
suggestions for improving the metadata.

## A 1- RELEVANCE FOR ENVIRONMENTAL POLICY

Regional level:

- **Convention on Long-range Trans-boundary Air Pollution (CLRTAP), EMEP Protocol**
- **The Protocol on Pollutant Release and Transfer Registers (PRTR)**

Subregional level:

- **EU National Emission Ceilings Directive**
  - EMEP/EEA air pollutant emission inventory guidebook 2019



## **Indicator A1 – International agreements, country context:**

The most important international agreements ratified in the area of environment protection include the following:

- **Convention on Long-range Trans-boundary Air Pollution (CLRTAP)**

(became a Party to the Convention, not ratified (accepted or approved) any of the 8 Convention protocols)

- **The Protocol on Pollutant Release and Transfer Registers (PRTR)**

(signed the Aarhus Convention of 15 September 2008)

- **United Nations Framework Convention on Climate Change (UNFCCC)**

(ratified the UNFCCC in 2000, the Kyoto Protocol was also ratified on April, 2007, The Fourth National Communication Report on Greenhouse Gas Emissions 2015-2018)



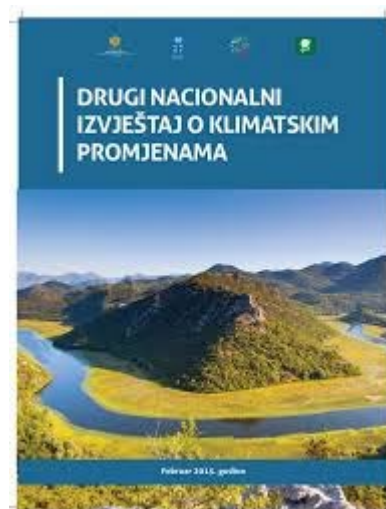
# Country data collection and processing system for A1

Data collection: there is no reporting mechanisms for UNECE LRTAP Convention, data from GHG Inventory

The Third National Communication (TNC) and Second Biennial Update Report on Greenhouse Gas Emissions (SBUR) of Bosnia and Herzegovina under the United Nations Framework Convention on Climate Change (UNFCCC) submitted to the UNFCCC Secretariat

- assistance of 48 local experts

Agency for Statistics of BiH not directly involved !



# **NCR Quality control (QC) and Quality assurance (QA)**

Extract from The Third National Communication:

- ❑ the main problem related to quality assurance is the quality of input activity data.
  - **statistical data are not harmonized with methodology of inventory compilation in terms of data availability and inadequate data format;**
- ❑ recommendation for improvements in the GHG inventory :
  - Capacity building in the statistics in data collection and statistics necessary for the establishment of the GHG inventory;



# A1 Excel spreadsheet- country data collection

## SO2, NOx and NMVOC emissions only

		Emissions of the main pollutants per capita																			
	Unit	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
55	Population (Row 1 / row 55)	million people	3,7	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,8	3,5	3,5	3,5	3,5	3,5	
56	Sulphur dioxide (Row 1 / row 55)	kg/capita	0,00	0,00	0,00	72796,9	91018,2	91178,8	78155,1	105535	100820	106223	108358	113994	113268	118227	116791	146682	0	0	0
57	Nitrogen oxides (Row 6 / row 55)	kg/capita	0,00	0,00	0,00	14585,9	14924,5	16031,7	15344,8	16494,9	16481,9	17662,7	19908,9	21478	23489,6	18553,2	22179,3	24428,5	0	0	0
58	NMVOC (Row 11 / row 55)	kg/capita	0,00	0,00	0,00	5989,58	5895,83	6310,17	6120,22	6031,75	5839,19	6087,98	5987,51	5862,61	6281,25	5977,58	6607,63	6902,6	0	0	0
55	Ammonia (Row 16 / row 55)	kg/capita	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
60	Carbon monoxide (Row 21 / row 55)	kg/capita	0,00	0,00	0,00	33664,1	33747,4	36247,7	35618	35045,5	34392,4	35903,2	33663,8	33335,9	33854,2	36076,6	39705,3	38469,1	0	0	0
61	Hydrocarbons (Row 26 / row 55)	kg/capita	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
62	TSP (Row 31 / row 55)	kg/capita	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
63	PM10 (Row 36 / row 55)	kg/capita	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
64	PM2.5 (Row 41 / row 55)	kg/capita	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Emissions of the main pollutants per area																			
	Unit	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
65	Country area (Row 1 / row 65)	1000 km²	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	
66	Sulphur dioxide (Row 1 / row 65)	t/ km2	0,00	0,00	0,00	5460,09	6826,77	6844,15	5866,55	7921,75	7567,83	7971,37	8133,68	8556,75	8495,61	8858,33	8054,38	10102,7	0	0	0
67	Nitrogen oxides (Row 6 / row 65)	t/ km2	0,00	0,00	0,00	1094,01	1119,4	1203,39	1151,83	1238,16	1237,18	1325,47	1494,42	1612,2	1761,82	1390,12	1529,58	1682,52	0	0	0
68	NMVOC (Row 11 / row 65)	t/ km2	0,00	0,00	0,00	449,245	442,213	473,661	459,402	452,761	438,307	456,863	449,44	440,065	471,121	447,878	455,691	475,418	0	0	0
69	Ammonia (Row 16 / row 65)	t/ km2	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
65	Carbon monoxide (Row 21 / row 65)	t/ km2	0,00	0,00	0,00	2524,95	2531,2	2720,86	2673,59	2630,62	2581,6	2694,3	2526,91	2502,3	2539,21	2703,09	2738,25	2649,57	0	0	0
71	Hydrocarbons (Row 26 / row 65)	t/ km2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
72	TSP (Row 31 / row 65)	t/ km2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
73	PM10 (Row 36 / row 65)	t/ km2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
74	PM2.5 (Row 41 / row 65)	t/ km2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Emissions of the main pollutants per unit of GDP																			
	Unit	1995	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
75	GDP Constant prices 2011 (PPP)	Billion Int dollars	7,0	23,6	24,6	25,9	27,0	28,6	31,1	32,8	34,7	36,6	35,5	35,8	36,1	35,8	36,6	37,0	38,0	39,8	41,1
76	Sulphur dioxide (Row 1 / row 75)	kg /1000 Int.dollars	0,00	0,00	0,00	10783,5	12964,1	12249,9	9654,6	12371,4	11178,3	11162,5	11726,4	12242,4	12045,5	12678,1	11257,9	13969,9	0	0	0
77	Nitrogen oxides (Row 6 / row 75)	kg /1000 Int.dollars	0,00	0,00	0,00	2160,64	2125,76	2153,87	1895,56	1933,64	1827,43	1856,09	2154,52	2306,62	2498	1989,55	2137,96	2326,56	0	0	0
78	NMVOC (Row 11 / row 75)	kg /1000 Int.dollars	0,00	0,00	0,00	887,249	839,771	847,775	756,039	707,079	647,418	639,758	647,96	629,612	667,979	641,005	636,937	657,399	0	0	0
79	Ammonia (Row 16 / row 75)	kg /1000 Int.dollars	0,00	0,00	0,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
80	Carbon monoxide (Row 21 / row 75)	kg /1000 Int.dollars	0,00	0,00	0,00	4986,72	4806,8	4869,9	4399,94	4108,26	3813,24	3772,9	3643,05	3580,1	3600,22	3868,67	3827,36	3663,77	0	0	0

# Relation to other indicators of the UNECE guidelines:

## A2- Ambient air quality in urban areas

Federal hydrometeorological institute

<http://www.fhmzbih.gov.ba/latinica/index.php>

Google prevoditelj x Mreža stanica x Tuzlanski kanton - Mor x Zavod za javno zdravlje x Federalni hidrometeorološki zavod x Hidro meteo x

Not secure | fhmzbih.gov.ba/latinica/index.php

Od 22.9.2019. godine pojavili su se tehnički problemi na stranici Federalnog hidrometeorološkog zavoda. Radimo na otklanjanju problema i to ćemo popraviti što je prije moguće. Sve informacije se mogu dobiti putem telefonskih linija.

**Indeks kvaliteta zraka**

podaci od: 22.10.2019. - 20h

mjerna stanica	AQI
ambasada SAD	67
Bjelave	43
Ivan Sedlo	36
Vijećnica	29
Otoka	59
Ilidža	*
Ilijaš	62
Kakanj	*
Brist	*
Tetovo	88
Centar	63
Radakovo	67
Vranduk	119
Jajce	33
Goražde	61
Skver	113
BKC	18
Bukinje	8
Žvinice	48
Lukavac	118

LEGENDA:

- nema mjerenja
- dobar
- umjeren
- nezdrav za osjetljive grupe
- nezdrav
- veoma nezdrav
- opasan

22.10.2019. 20h Federalni hidrometeorološki zavod

zvučni zapis prognoze dnevna prognoza dugoročna prognoza

www.fhmzbih.gov.ba/latinica/ZRAK/regulativa.php

**METEO ALARM**  
upozorenje na opasne vremenske pojave  
Meteoalarm

**SATELITSKI SNIMAK**  
COPYRIGHT 2019. EUMETSAT  
SatSA.com 20.00 (10.00 UTC)

**GRMLJAVINA**

ENG 8:23 PM  
SRL 10/22/2019

## A2 Excel spreadsheet- suggestions for improving

	O3 - ground-level ozone														
17	Daily average limit value	□g/m3	-	-	-	-	-	-	-	-	-	-	-	-	-
18	Annual average limit value	□g/m3	-	-	-	-	-	-	-	-	-	-	-	-	-

- ozone limit values are calculated as an 8-hour average. It should read: "8-hour limit value,,
- Note that no national limit value has been defined (annual average)

	O3 - ground-level ozone														
21	Number of days with exceeded daily limit value	#													

- more convenient: "Number of days with exceeded 8-hour rolling average limit value,,
- other additional useful information, eg. eionet code; geographical coordinates ..





# Impact on Air emissions Account

❖ from statistics point of side:

- effectively implement IPA 2017, **Air Emissions Accounts** module (Regulation (EU) No 691/2011 on European environmental economic accounts, AEA Questionnaire)
- Challenges:
- bridging items between air emissions account total and LRTAP total
- bridging items between air emissions account total and UNFCCC total

The screenshot displays the 'AEA Questionnaire - Excel' spreadsheet. The interface includes a ribbon with tabs: File, Home, Insert, Page Layout, Formulas, Data, Review, View, and Tell me what you want to do... The 'Home' tab is active, showing options for Clipboard, Font, Alignment, Number, Conditional Formatting, Styles, Cells, and Editing. The spreadsheet is titled 'DEMAND\_PROD' and shows a table for 'Air emissions by industry'. The table has columns for years 1995, 1996, 1997, 1998, 1999, 2000, and a column for '2' (likely 2001). The rows are categorized by industry, with a green background for the first four rows (Total industries, Agriculture, forestry and fishing, Mining and quarrying, and Manufacturing). The 'Air emissions by industry' section is highlighted in green. The table structure is as follows:

	1995	1996	1997	1998	1999	2000	2
<b>Air emissions by industry</b>							
<b>A U 01-99 Total industries</b>							
<b>A Agriculture, forestry and fishing</b>							
A01 Crop and animal production, hunting and related service activities							
A02 Forestry and logging							
A03 Fishing and aquaculture							
<b>B Mining and quarrying</b>							
<b>C Manufacturing</b>							
C10-C12 Manufacture of food products, beverages and tobacco							
C13-C15 Manufacture of textiles, wearing apparel and leather products							
C16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials							
C17 Manufacture of paper and paper products							
C18 Printing and reproduction of recorded media							
C19 Manufacture of coke and refined petroleum products							
C20 Manufacture of chemicals and chemical products							
C21 Manufacture of basic pharmaceutical products and pharmaceutical preparations							

The bottom of the spreadsheet shows a status bar with 'Average: 0', 'Count: 206', and 'Sum: 0'. The taskbar at the bottom indicates the system is 'Ready' and the date is '10/28/2019'.

## Country challenges

- as a first step, the ratification of the protocols implemented by the countries of the region,
- establishment of a network of monitoring stations,
- continuous monitoring of air quality.



Thank you for your attention

**Agency for Statistics of Bosnia and  
Herzegovina**

Transport, Environment, Energy and Regional Statistics  
Department

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