

Assessment of heavy metal and POP pollution on global, regional and national scales

Part II

SUPPLEMENTARY MATERIALS FOR POPs

Data Report 2/2022

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Assessment of heavy metal and POP pollution on global, regional and national scales

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SUPPLEMENTARY MATERIALS FOR POPs

Irina Strizhkina, Alexey Gusev, Olga Rozovskaya, Victor Shatalov



Meteorological Synthesizing Centre - East

2nd Roshchinsky proezd 8/5, 115419 Moscow, Russia
phone.: +7 926 292 00 18; e-mail: msce@msceast.org; www.msceast.org

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Introduction

This document is a supplementary report to the EMEP Status Report 2/2020. It provides detailed information on the modeling results for 2020 on polycyclic aromatic hydrocarbons (benzo[a]pyrene (B(a)P), benzo[b]fluoranthene (B(b)F), benzo[k]fluoranthene (B(k)F), indeno[1,2,3-cd]pyrene (I(cd)P)), polychlorinated dibenzo(p)dioxins and dibenzofurans (PCDD/Fs), hexachlorobenzene (HCB), polychlorinated biphenyls (PCB-153). Besides, the report contains evaluation of the modelled concentrations against EMEP measurements. The modelling results are based on meteorological data related to 2020, and emission data related to 2019 (the numerical data are available in the internet: <http://en.msceast.org/index.php/pollution-assessment/emep-domain-menu/data-hm-pop-menu>).

The updated information based on the emissions for 2020 will be available on the internet (www.msceast.org).

In *Chapter 1* maps of annual mean air concentrations and total deposition of B(a)P, B(b)F, B(k)F, I(cd)P, PCDD/Fs, HCB, PCB-153 are presented. Spatial resolution of the maps is 0.1°x0.1°.

Chapter 2 is focused on transboundary aspects of atmospheric pollution in the EMEP region. It presents country-averaged deposition fluxes split in three components: contribution of EMEP anthropogenic emissions, secondary sources (wind re-suspension and natural emission) within the EMEP region and sources outside the EMEP countries (non-EMEP sources). Furthermore, for each EMEP country fraction of anthropogenic deposition caused by national and foreign emission sources is presented. Finally, export of emitted B(a)P, B(b)F, B(k)F, I(cd)P, PCDD/Fs, HCB, PCB-153 to other countries is characterized. Deposition to the EMEP region caused by emissions of each EMEP country is presented as a sum of (1) a mass of a pollutant deposited within national's territory, and (2) a mass of a pollutant emitted by a country and deposited to other EMEP countries.

Source-receptor tables are presented in *Chapter 3*. The tables summarize information on contributions of emission sources of each EMEP country to deposition in other EMEP countries. In particular, model estimates in the tables can be interpreted as deposition from a given country to other countries-receivers in columns, and deposition to a given country from other countries-emitters in rows.

Chapter 4 provides the summary of the evaluation of modelling results against concentrations observed at the EMEP monitoring stations. The chapter contains (1) tables with statistical indicators for each station, (2) diagrams showing comparison of modelled and observed annual mean air concentrations, and (3) time series of modelled and measured monthly mean pollution levels. The possible reasons of the discrepancies between calculated and observed levels are discussed.

Statistical indicators, used in the chapter for the evaluation of the agreement between mean modelled (\bar{M}) and observed (\bar{O}) pollutant concentrations, include Mean Relative Bias (MRB), and Pearson's correlation coefficient (R_c), calculated using equations (1) and (2), respectively:

$$MRB = \frac{(\bar{M} - \bar{O})}{\bar{O}} \cdot 100\% \quad (1)$$

$$Rc = \frac{\sum_1^N (M - \bar{M}) \cdot (O - \bar{O})}{\sqrt{\sum_1^N (M - \bar{M})^2 \cdot \sum_1^N (O - \bar{O})^2}} \quad (2)$$

Besides, a fraction of stations is calculated, for which the difference of modelled and observed values is within a factor of 2 (F2), is calculated.

Besides, a fraction of stations, for which the difference of modelled and observed concentrations is within a factor of 2 (F2), is calculated.

Maps of B(a)P, B(b)F, B(k)F, I(cd)P, PCDD/Fs, HCB, and PCB-153 deposition to the marginal seas (Baltic, Black, Caspian, North, and Mediterranean) within the EMEP region are presented in Chapters 5.

1. POPs POLLUTION OF THE EMEP DOMAIN IN 2020

1.1. Polycyclic aromatic hydrocarbons (PAHs)

1.1.1. Benzo[a]pyrene (B(a)P)

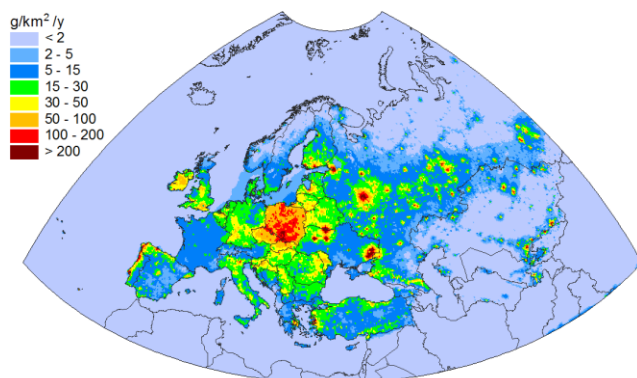


Figure 1.1. B(a)P total deposition, $\text{g/km}^2/\text{y}$

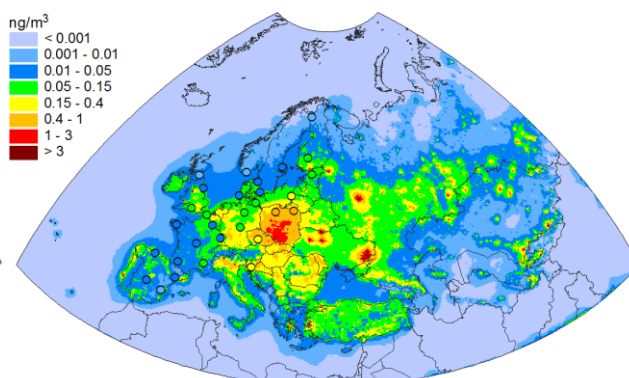


Figure 1.2. B(a)P concentrations in air, ng/m^3

1.1.2. Benzo[b]fluoranthene (B(b)F)

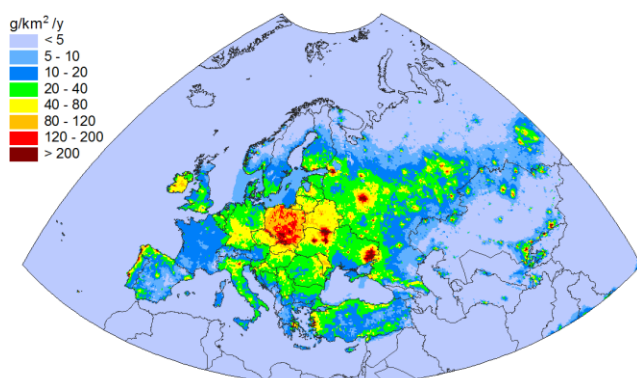


Figure 1.3. B(b)F total deposition, $\text{g/km}^2/\text{y}$

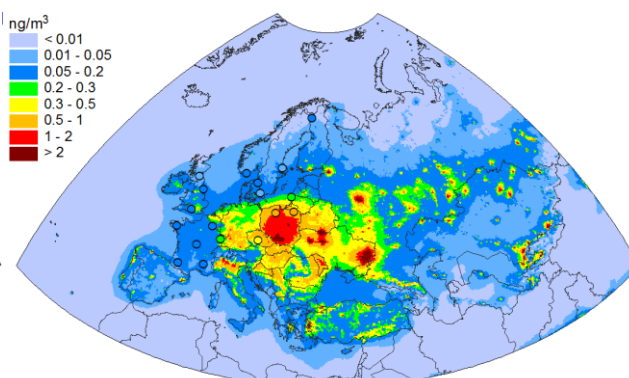


Figure 1.4. B(b)F concentrations in air, ng/m^3

1.1.3. Benzo[k]fluoranthene (B(k)F)

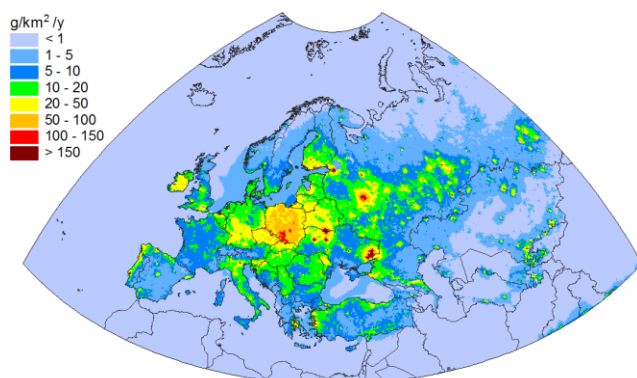


Figure 1.5. B(k)F total deposition, $\text{g/km}^2/\text{y}$

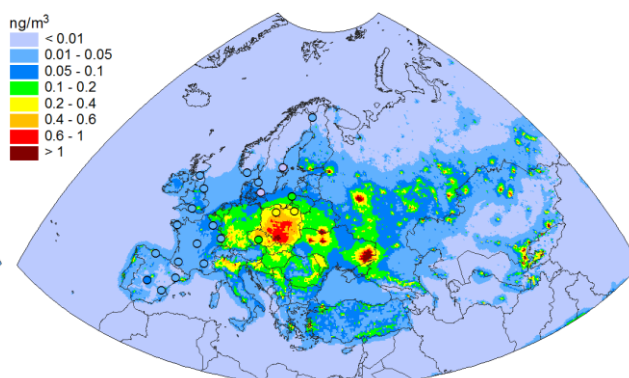


Figure 1.6. B(k)F concentrations in air, ng/m^3

1.1.4. Indeno[1,2,3-cd]pyrene (I(cd)P)

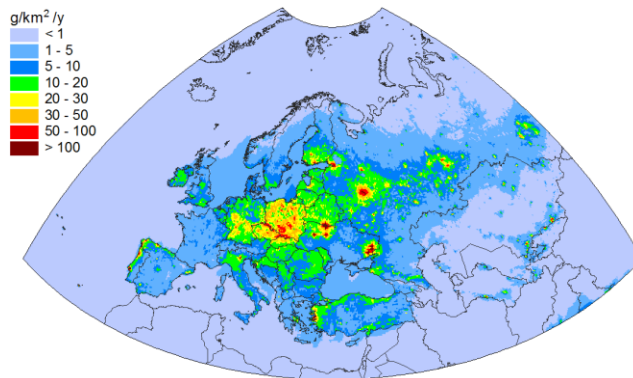


Figure 1.7. I(cd)P total deposition, g/km²/y

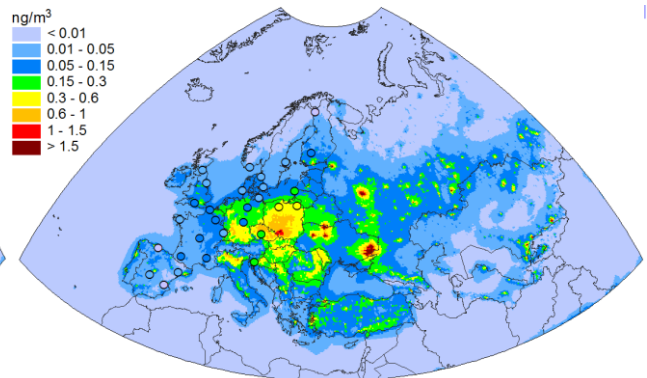


Figure 1.8. I(cd)P concentrations in air, ng/m³

1.2. Polychlorinated dibenzo(p)dioxins and dibenzofurans (PCDD/Fs)

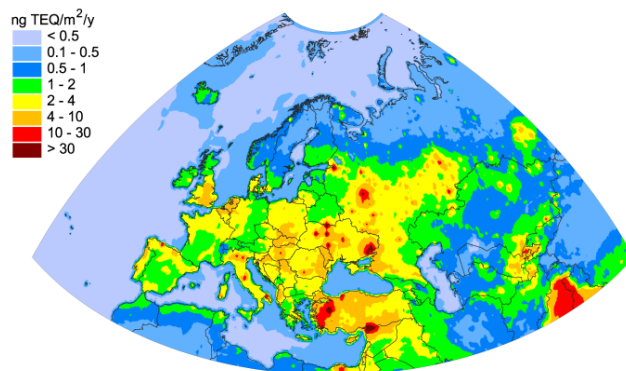


Figure 1.9. PCDD/F total deposition, ng TEQ/m²/y

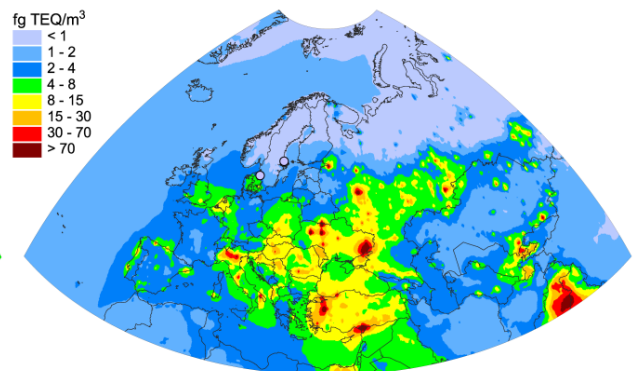


Figure 1.10. PCDD/F concentrations in air, fg TEQ/m³

1.3. Hexachlorobenzene (HCB)

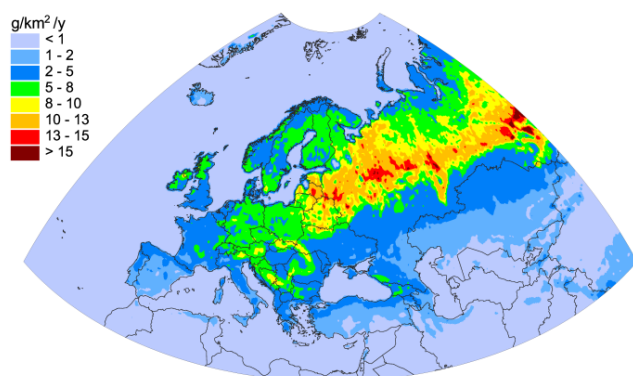


Figure 1.11. HCB total deposition, g/km²/y

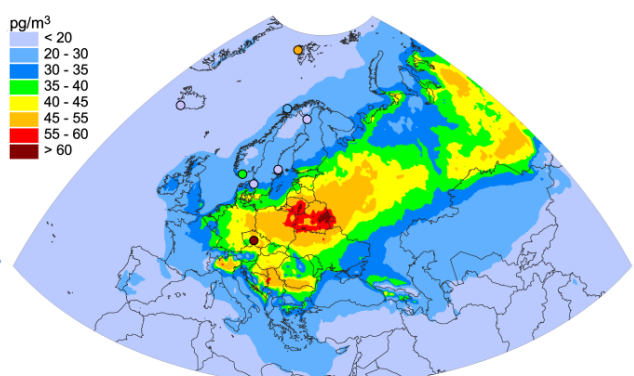


Figure 1.12. HCB concentrations in air, pg/m³

1.4. Polychlorinated biphenyls (PCB-153)

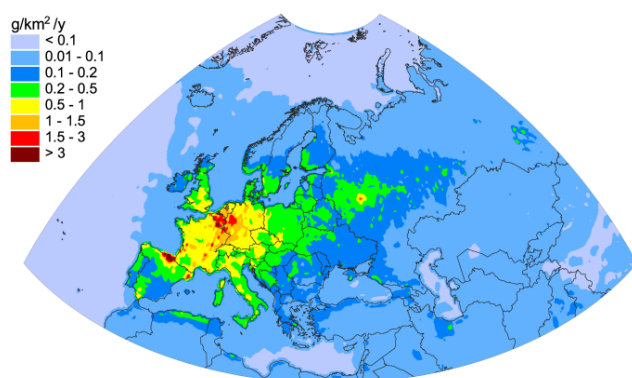


Figure 1.13. PCB-153 total deposition, $\text{g/km}^2/\text{y}$

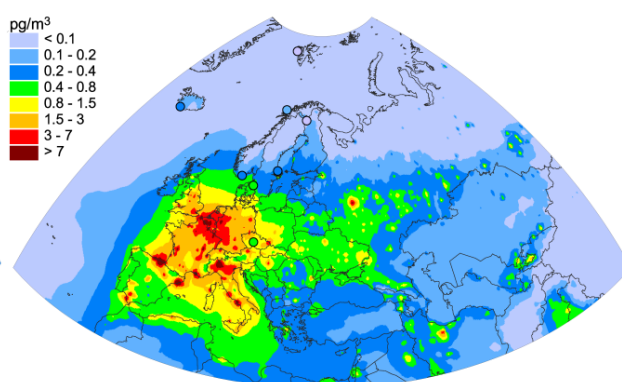


Figure 1.14. PCB-153 concentrations in air, pg/m^3

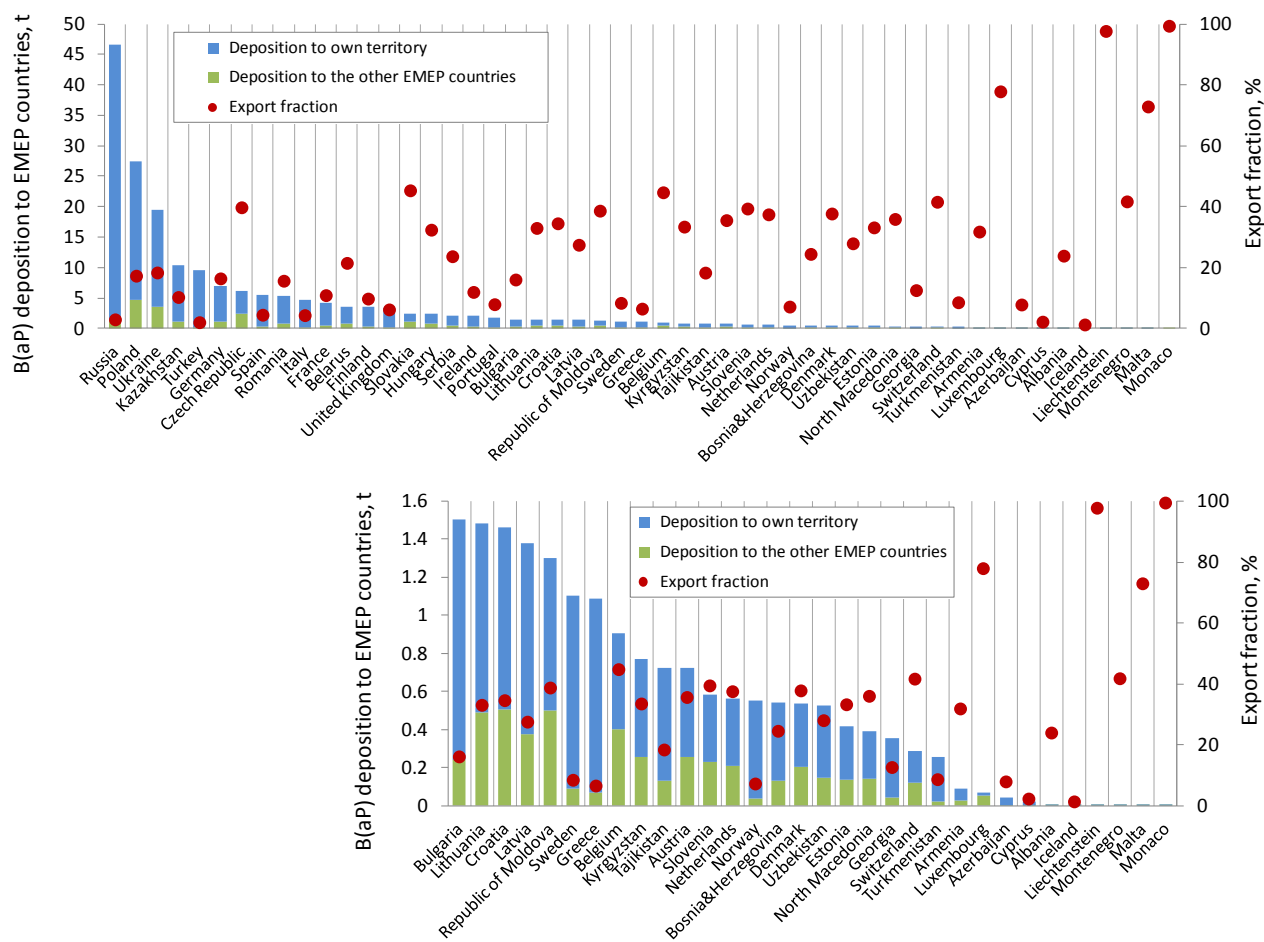


Fig. 2.3. Contribution of EMEP countries to transboundary transport of B(a)P. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

2.1.2. Benzo(b)fluoranthene (B(b)F)

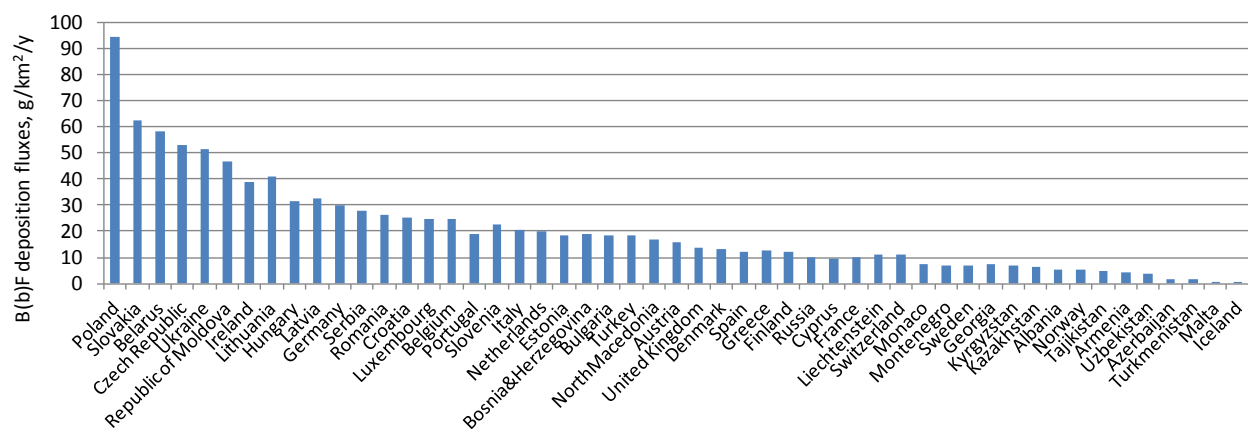


Fig. 2.4. Country-average deposition fluxes of B(b)F to EMEP countries

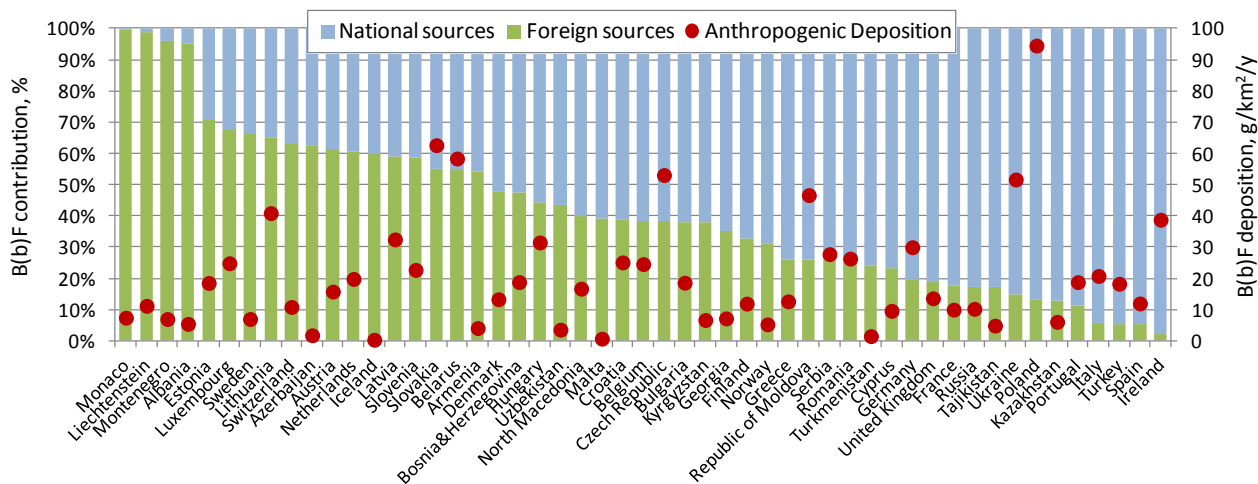


Fig. 2.5. Relative contribution of national sources and transboundary transport to B(b)F deposition in the EMEP countries

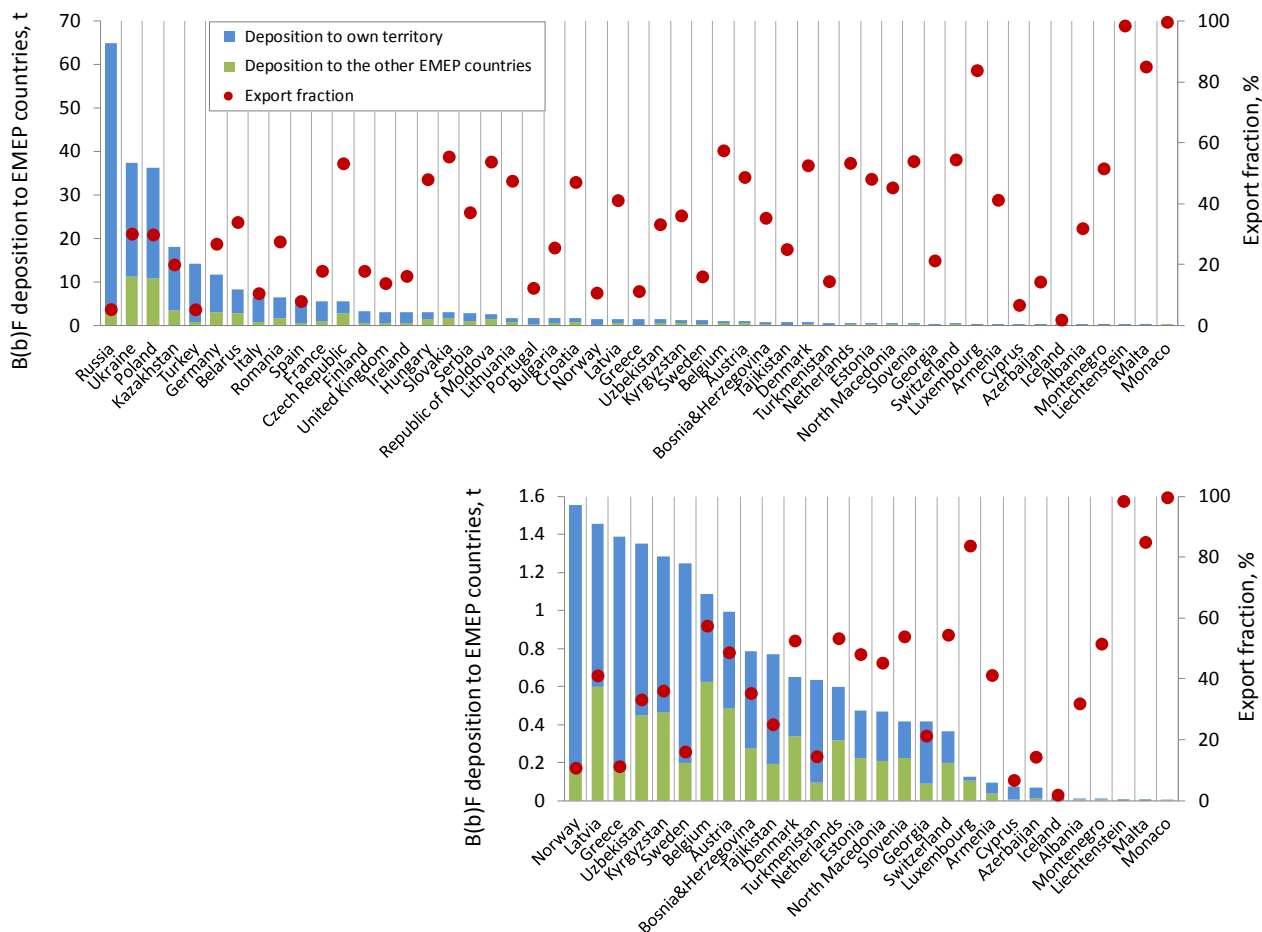


Fig. 2.6. Contribution of EMEP countries to transboundary transport of B(b)F. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

2.1.3. Benzo(k)fluoranthene (B(k)F)

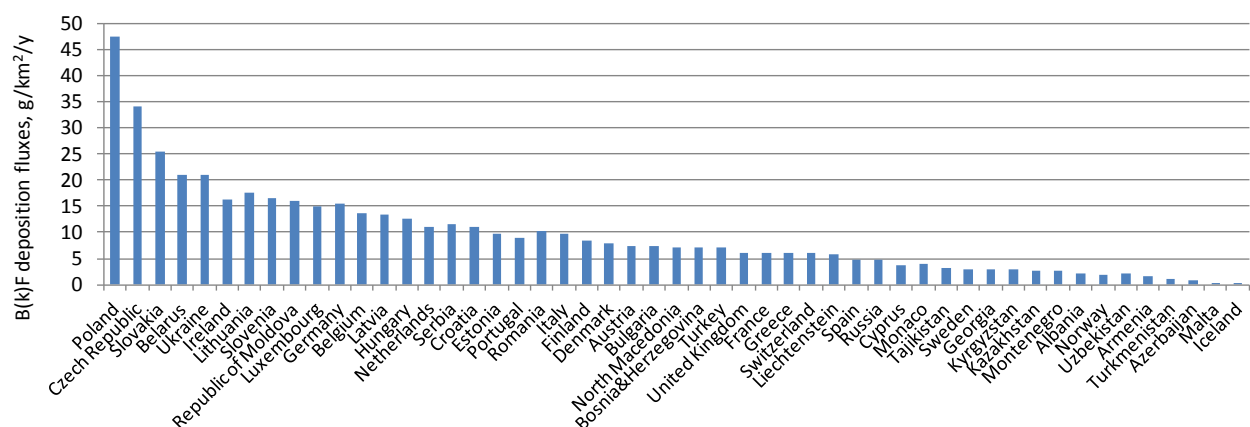


Fig. 2.7. Country-average deposition fluxes of B(k)F to EMEP countries.

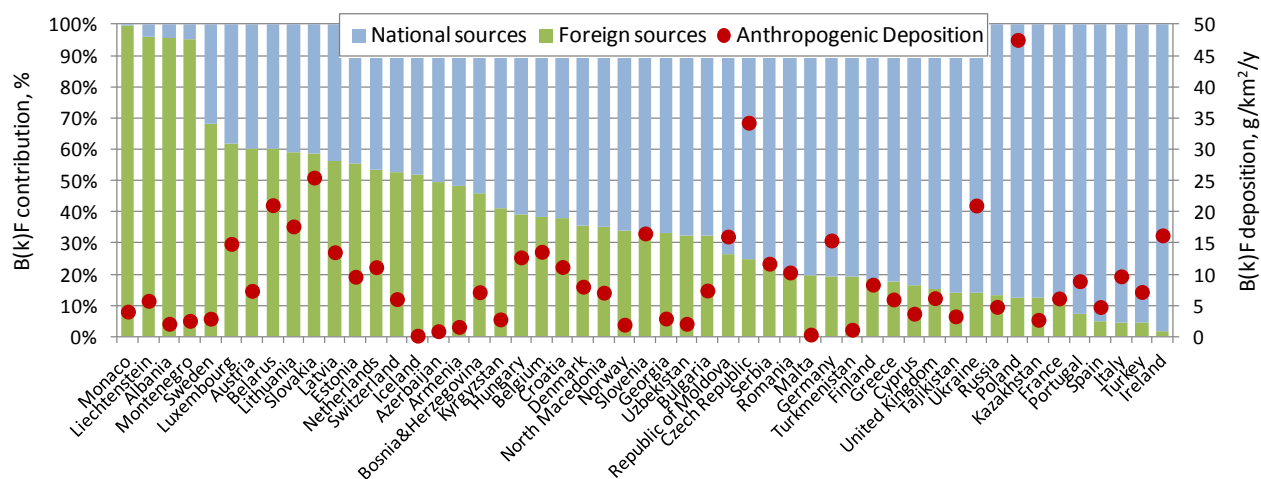


Fig. 2.8. Relative contribution of national sources and transboundary transport to B(k)F deposition in the EMEP countries

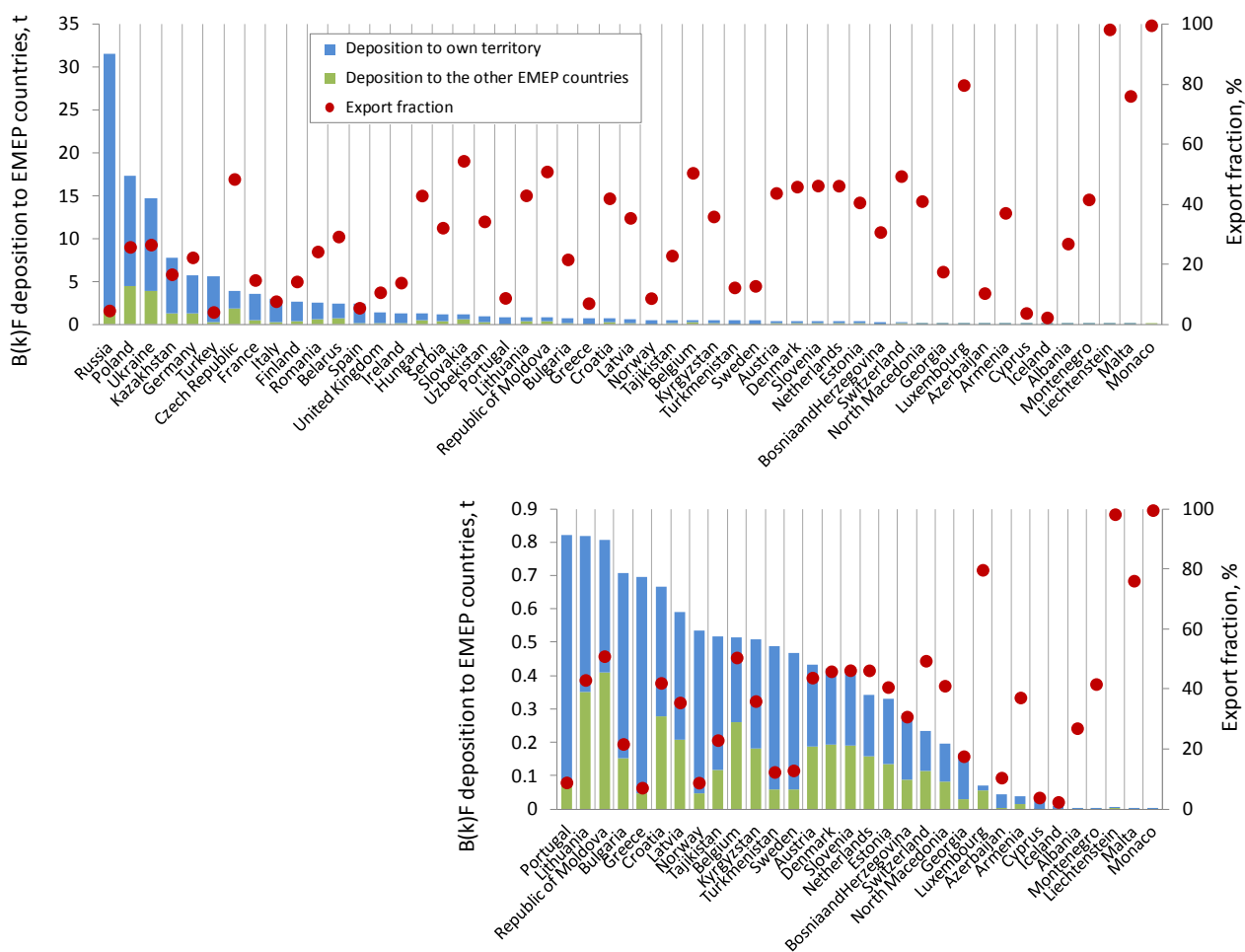


Fig. 2.9. Contribution of EMEP countries to transboundary transport of B(k)F. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

2.1.4. Indeno(1,2,3-cd)pyrene (I(cd)P)

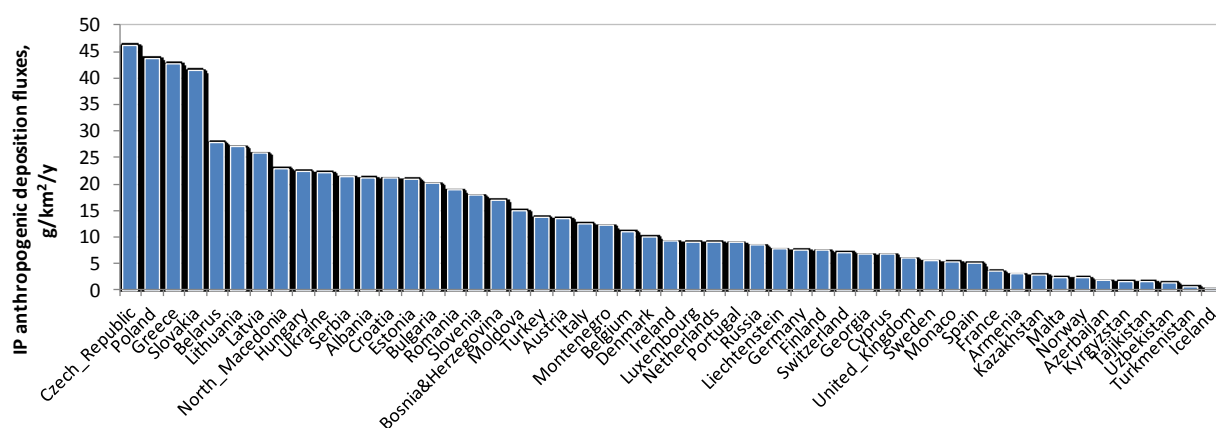


Fig. 2.10. Country-average deposition fluxes of I(cd)P to EMEP countries

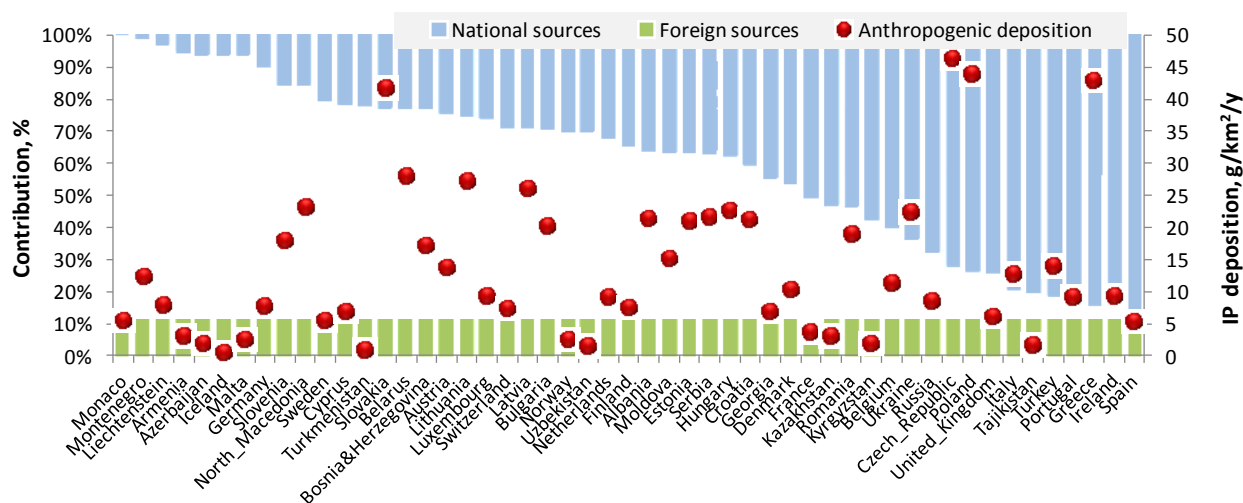


Fig. 2.11. Relative contribution of national sources and transboundary transport to I(cd)P deposition in the EMEP countries

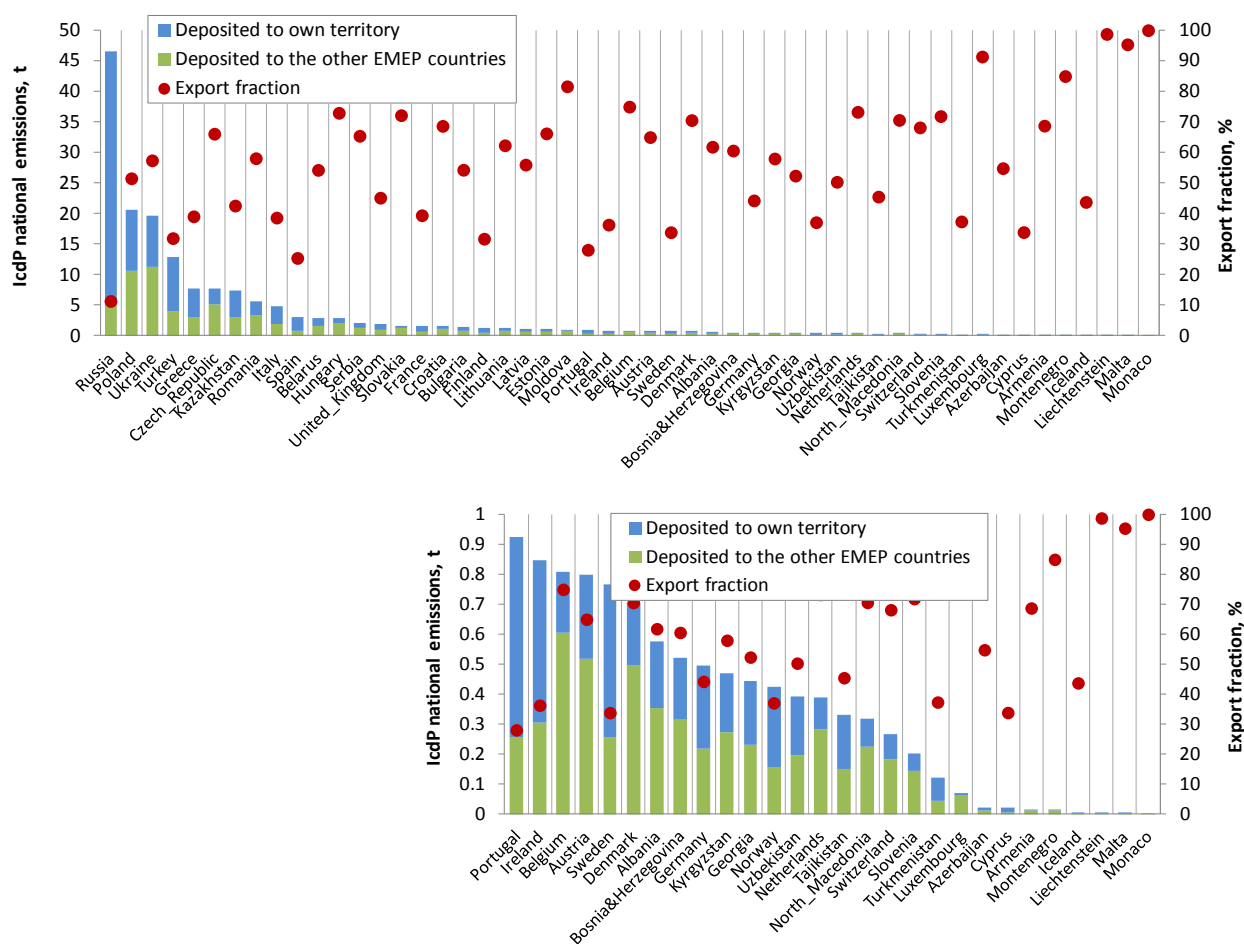


Fig. 2.12. Contribution of EMEP countries to transboundary transport of I(cd)P. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

2.2. Polychlorinated dibenzo(p)dioxins and dibenzofurans (PCDD/Fs)

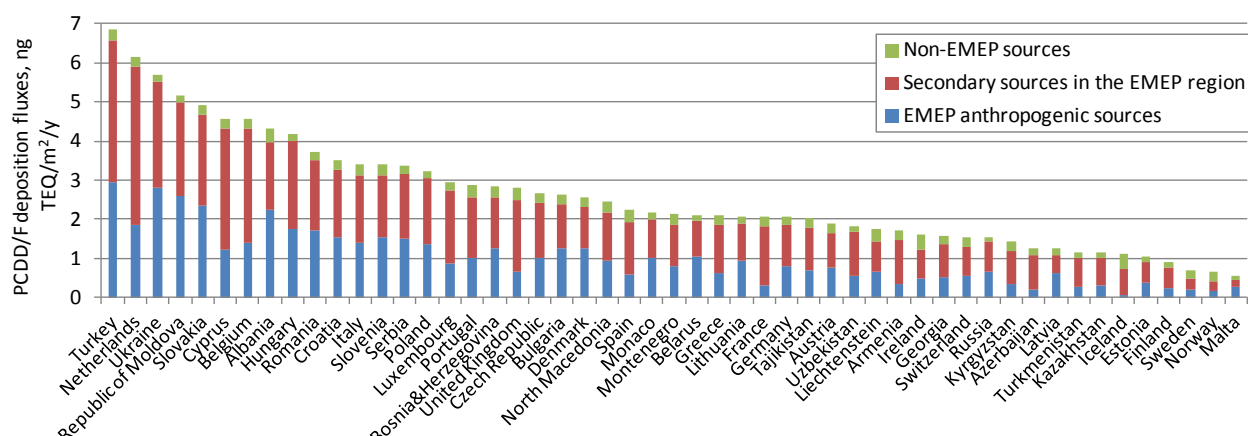


Fig. 2.13. Country-average deposition fluxes of PCDD/F to EMEP countries.

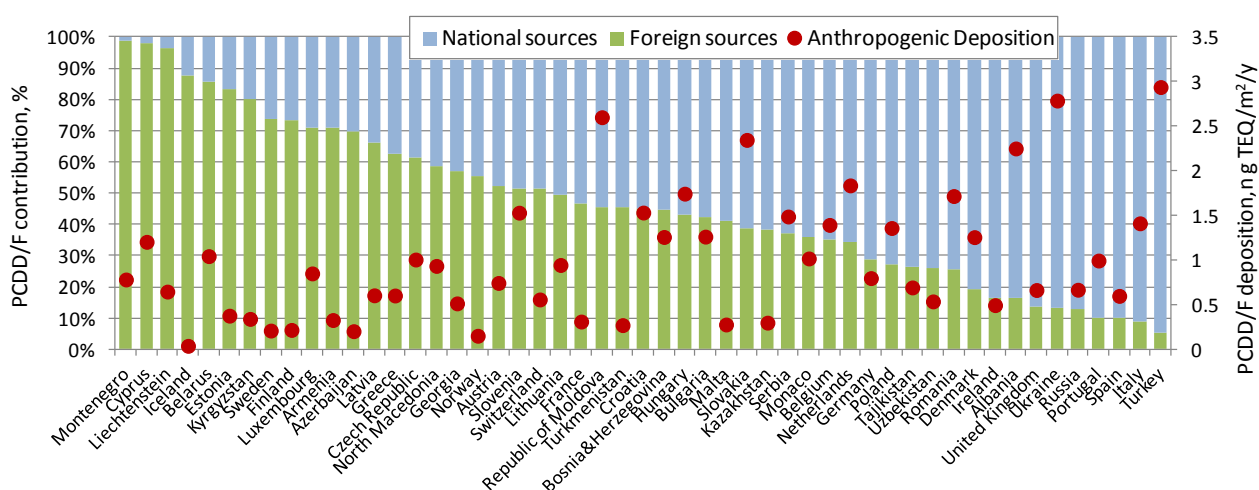


Fig. 2.14. Relative contribution of national sources and transboundary transport to PCDD/F deposition in the EMEP countries.

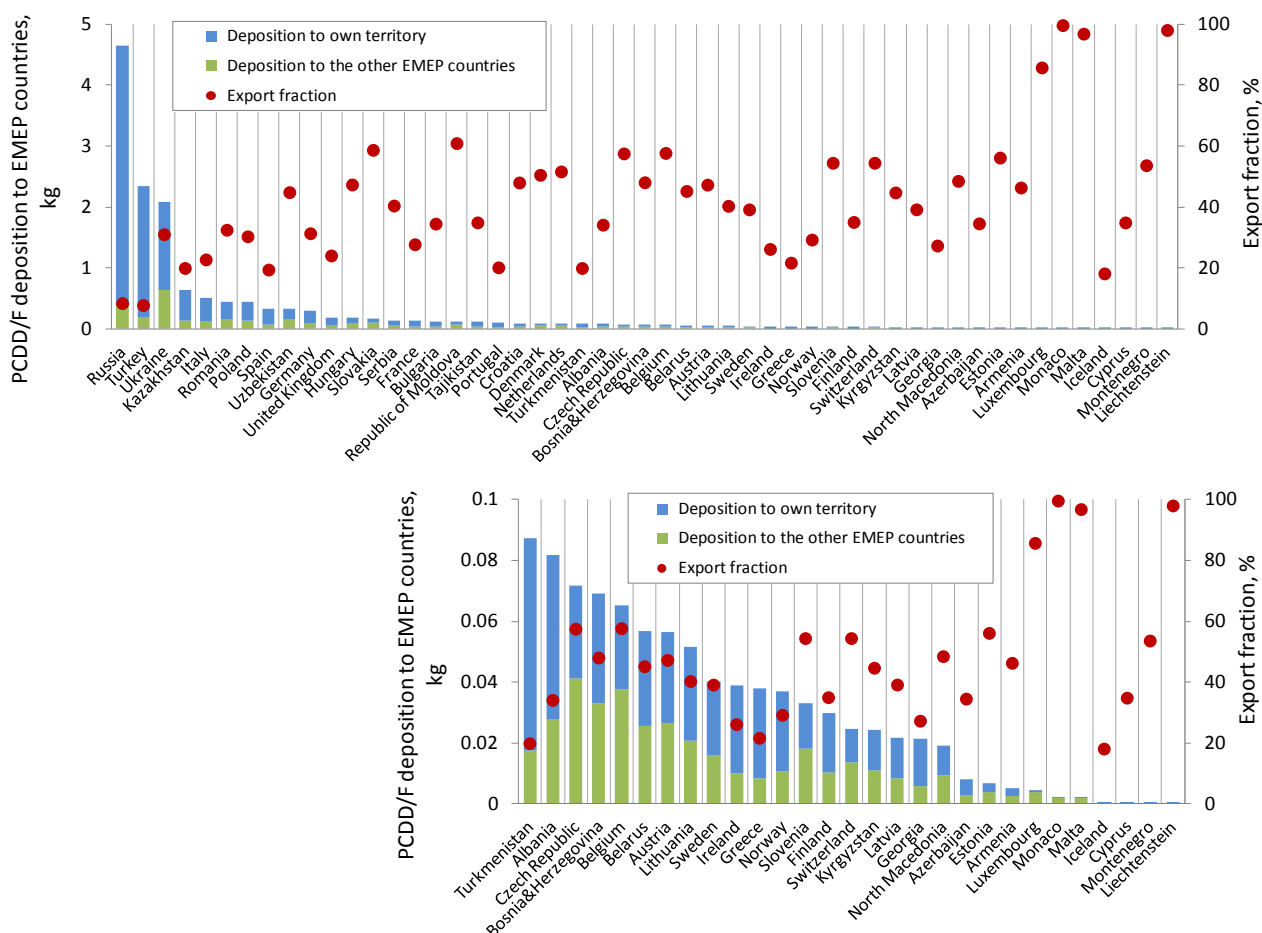


Fig. 2.15. Contribution of EMEP countries to transboundary transport of PCDD/F. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

2.3. Hexachlorobenzene (HCB)

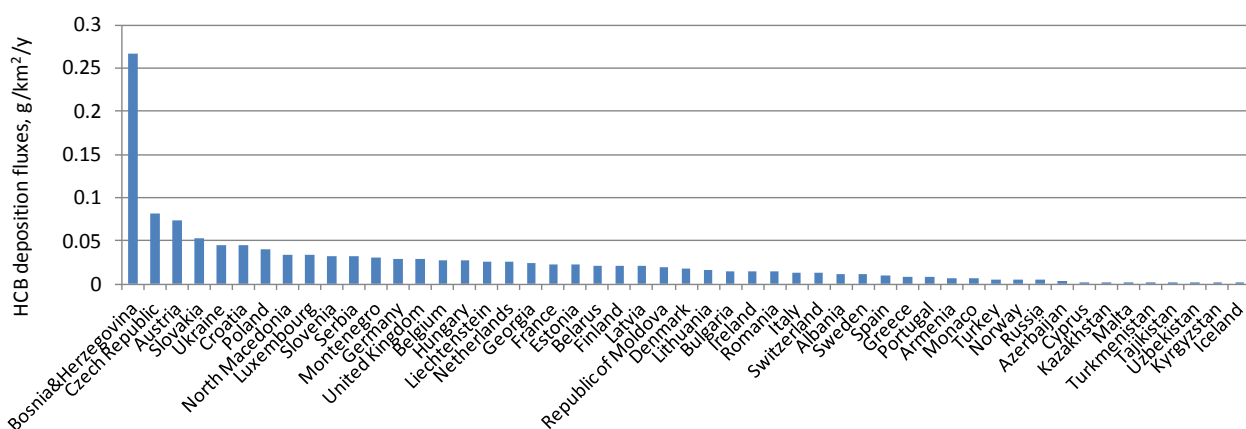


Fig. 2.16. Country-average deposition fluxes of HCB to EMEP countries.

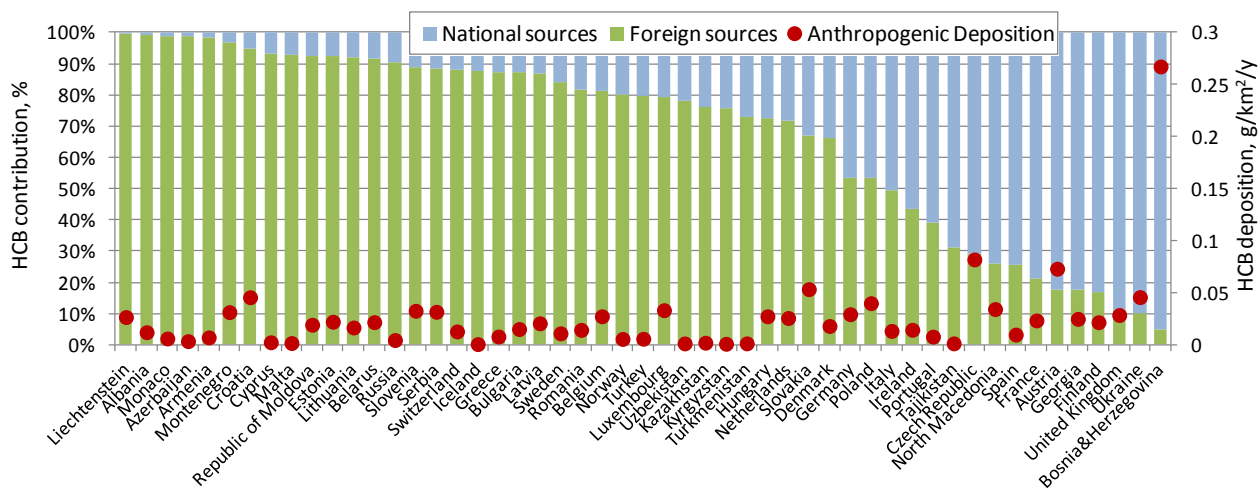


Fig. 2.17. Relative contribution of national sources and transboundary transport to HCB deposition in the EMEP countries

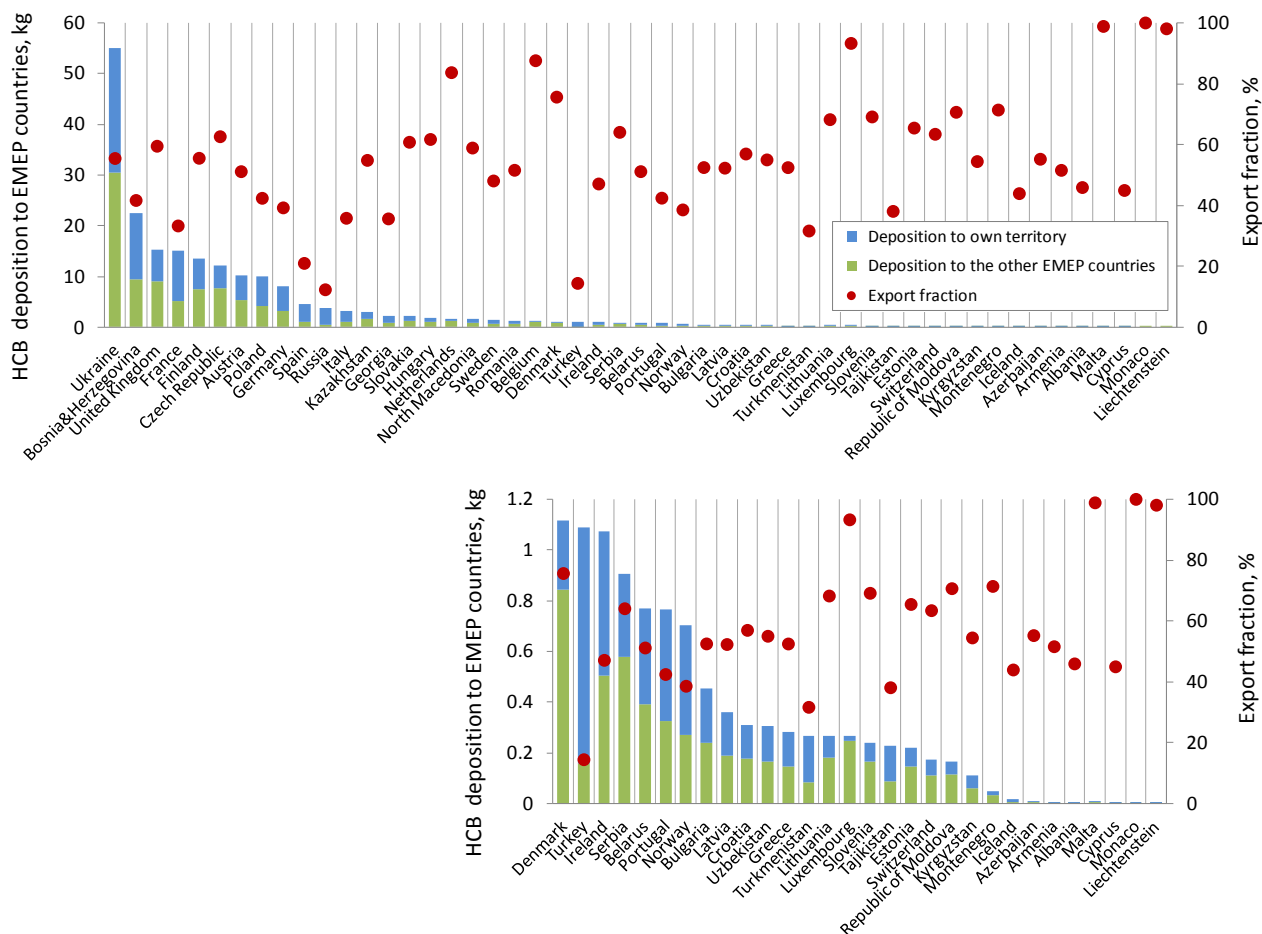


Fig. 2.18. Contribution of EMEP countries to transboundary transport of HCB. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

2.4. Polychlorinated biphenyls (PCB-153)

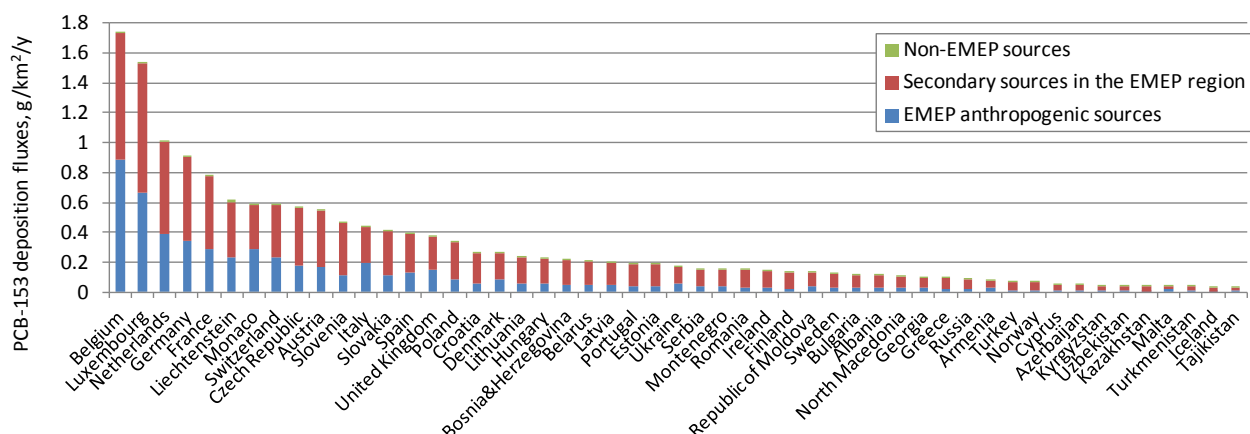


Fig. 2.19. Country-average deposition fluxes of PCB-153 to EMEP countries.

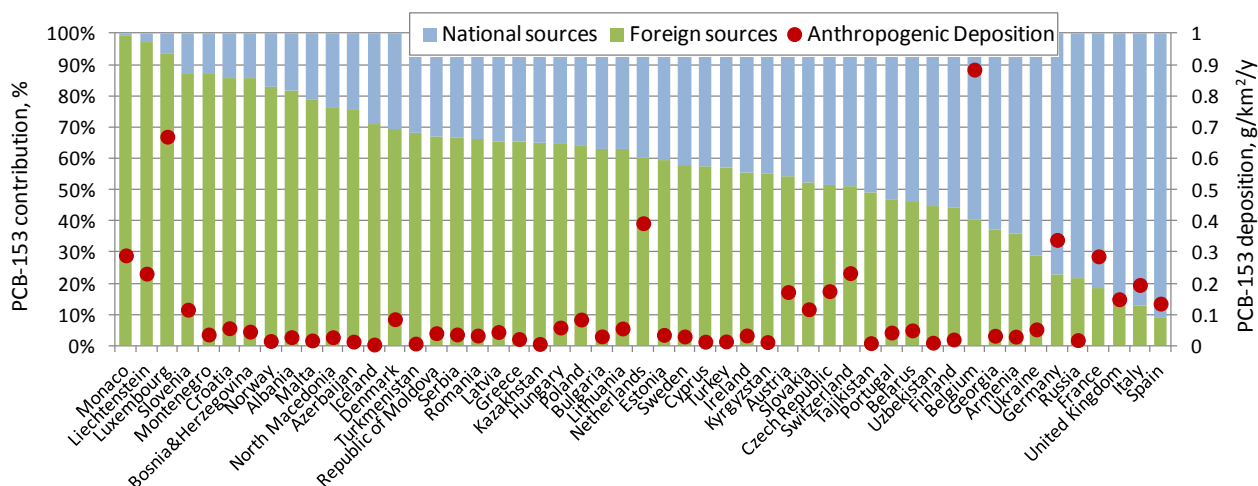


Fig. 2.20. Relative contribution of national sources and transboundary transport to PCB-153 deposition in the EMEP countries.

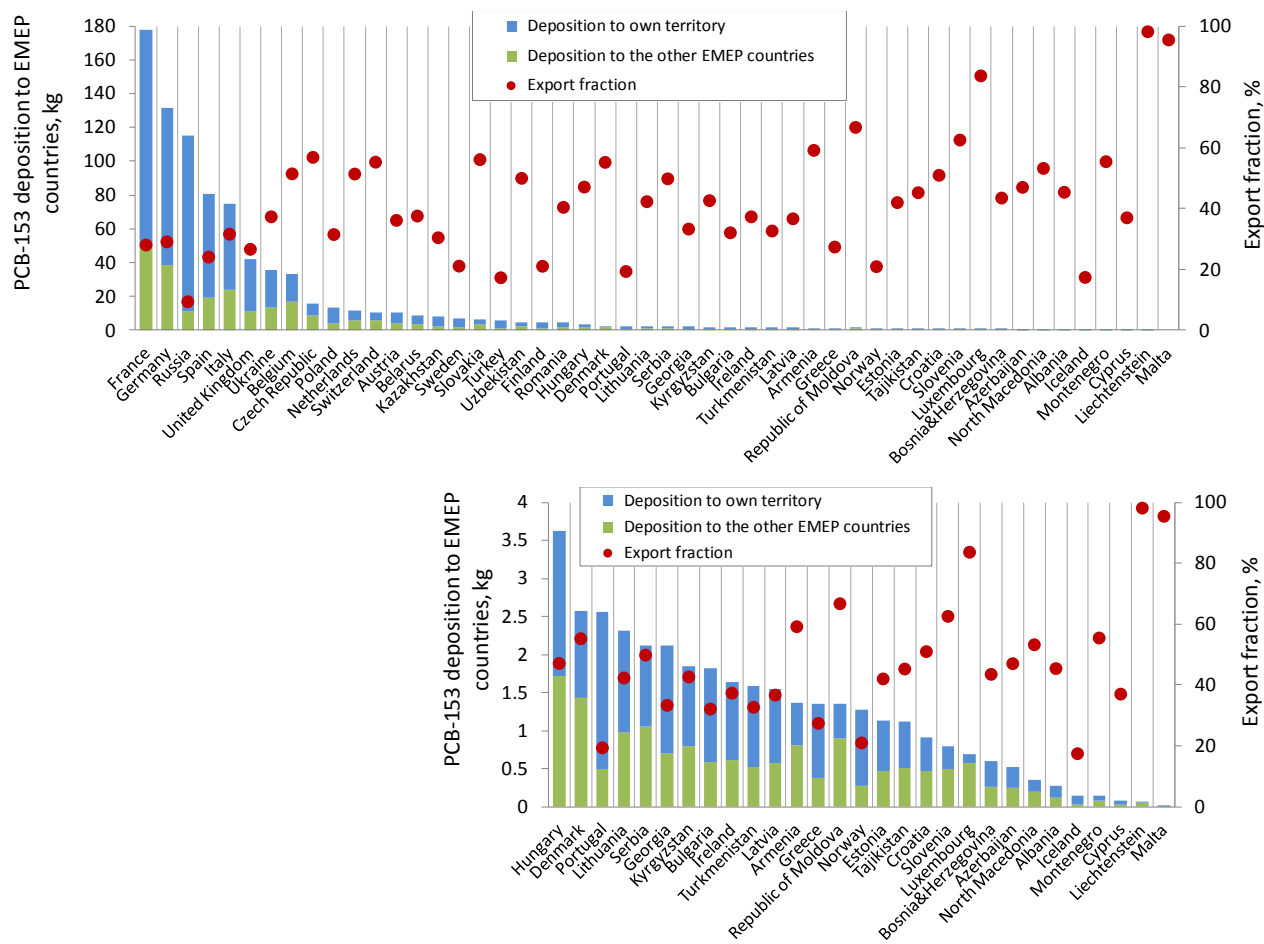


Fig. 2.21. Contribution of EMEP countries to transboundary transport of PCB-153. Red circle - fraction of total anthropogenic deposition to the EMEP countries exported outside the country.

3. SOURCE-RECEPTOR TABLES

Table 3.1. Codes of countries, regions and seas

Country/Region/Sea	Code	Country/Region/Sea	Code
Albania	AL	Monaco	MC
Armenia	AM	Montenegro	ME
Austria	AT	Netherlands	NL
Azerbaijan	AZ	Norway	NO
Belarus	BY	North Macedonia	MK
Belgium	BE	Poland	PL
Bosnia and Herzegovina	BA	Portugal	PT
Bulgaria	BG	Republic of Moldova	MD
Croatia	HR	Romania	RO
Cyprus	CY	Russian Federation	RU
Czech Republic	CZ	Serbia	RS
Denmark	DK	Slovakia	SK
Estonia	EE	Slovenia	SI
Finland	FI	Spain	ES
France	FR	Sweden	SE
Georgia	GE	Switzerland	CH
Germany	DE	Tajikistan	TJ
Greece	GR	Turkey	TR
Hungary	HU	Turkmenistan	TM
Iceland	IS	Ukraine	UA
Ireland	IE	United Kingdom	GB
Italy	IT	Uzbekistan	UZ
Kazakhstan	KZ		
Kyrgyzstan	KY	Baltic Sea	BAS
Latvia	LV	Black Sea	BLS
Lithuania	LT	Caspian Sea	CAS
Luxembourg	LU	North Sea	NOS
Malta	MT	Mediterranean Sea	MDT

Table 3.2. Matrix of B(a)P country-to-country deposition from anthropogenic sources in 2020, kg/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	4.80	0.00	0.02	0.00	0.13	0.00	0.40	0.00	0.00	0.00	0.13	0.03	0.00
AM	0.00	60.41	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.00	466.51	0.00	0.91	0.26	0.19	0.01	6.36	0.00	139.58	109.27	0.11
AZ	0.00	7.84	0.00	39.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BA	0.03	0.00	1.84	0.00	408.03	0.01	0.32	0.02	0.01	0.00	8.71	0.85	0.03
BE	0.00	0.00	0.01	0.00	0.00	500.39	0.00	0.00	0.29	0.00	0.17	28.32	0.09
BG	0.01	0.00	0.15	0.00	0.37	0.00	1263.24	0.12	0.00	0.00	0.93	0.19	0.00
BY	0.00	0.00	0.84	0.00	0.08	0.48	0.11	2817.69	0.09	0.00	30.44	11.39	1.29
CH	0.00	0.00	5.64	0.00	0.00	0.23	0.00	0.00	169.51	0.00	0.12	51.92	0.01
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.15	0.00	0.00	0.00
CZ	0.00	0.00	61.56	0.00	0.81	0.67	0.40	0.07	1.45	0.00	3756.00	194.50	0.30
DE	0.00	0.00	63.37	0.00	0.09	102.44	0.07	0.07	62.56	0.00	485.76	5835.19	14.53
DK	0.00	0.00	0.30	0.00	0.01	6.46	0.02	0.07	0.17	0.00	6.78	59.57	333.84
EE	0.00	0.00	0.13	0.00	0.01	0.39	0.00	8.13	0.03	0.00	3.81	4.95	1.33
ES	0.00	0.00	0.03	0.00	0.01	0.06	0.00	0.00	0.06	0.00	0.03	0.18	0.00
FI	0.00	0.00	0.20	0.00	0.01	0.90	0.01	6.28	0.05	0.00	7.47	7.88	2.68
FR	0.00	0.00	0.41	0.00	0.02	69.87	0.00	0.00	36.64	0.00	1.09	132.70	0.12
GB	0.00	0.00	0.06	0.00	0.00	7.58	0.00	0.01	0.07	0.00	1.39	7.33	0.84
GE	0.00	8.61	0.00	0.74	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.00	0.00
GR	0.27	0.00	0.05	0.00	0.08	0.00	48.60	0.03	0.00	0.00	0.34	0.08	0.00
HR	0.01	0.00	8.27	0.00	80.92	0.02	0.34	0.01	0.02	0.00	11.51	1.28	0.02
HU	0.00	0.00	29.11	0.00	6.89	0.04	0.92	0.14	0.06	0.00	44.16	3.20	0.03
IE	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.04	0.16	0.03
IS	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.11	0.42	0.12
IT	0.07	0.00	18.40	0.00	3.62	0.14	0.06	0.00	9.84	0.00	3.01	11.17	0.04
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.01	0.00	0.17	0.00	0.00	0.03	0.40	0.00	0.00	0.07	0.03	0.01
LI	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.28	0.00
LT	0.00	0.00	0.42	0.00	0.03	0.65	0.01	131.80	0.06	0.00	14.89	12.74	3.87
LU	0.00	0.00	0.00	0.00	0.00	7.42	0.00	0.00	0.10	0.00	0.04	8.17	0.00
LV	0.00	0.00	0.28	0.00	0.02	0.74	0.01	55.45	0.05	0.00	9.13	11.20	3.71
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.02	0.00	0.01	0.00	0.83	0.41	0.00	0.00	0.33	0.09	0.01
ME	0.28	0.00	0.05	0.00	6.10	0.00	0.20	0.00	0.00	0.00	0.28	0.05	0.00
MK	0.56	0.00	0.03	0.00	0.10	0.00	13.87	0.01	0.00	0.00	0.22	0.04	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.07	0.00	0.00	183.21	0.00	0.00	0.28	0.00	0.63	83.30	0.47
NO	0.00	0.00	0.24	0.00	0.01	6.61	0.02	0.60	0.15	0.00	6.22	31.36	25.72
PL	0.00	0.00	17.53	0.00	0.95	3.99	0.40	73.66	1.04	0.00	1359.92	236.65	6.72
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RO	0.00	0.00	1.41	0.00	2.04	0.04	97.32	0.84	0.03	0.00	6.77	1.51	0.02
RS	0.25	0.00	0.95	0.00	26.21	0.02	41.74	0.08	0.01	0.00	5.54	0.81	0.02
RU	0.00	0.16	0.62	1.35	0.05	1.28	0.60	365.87	0.10	0.00	20.28	17.41	4.07
SE	0.00	0.00	0.93	0.00	0.04	10.29	0.06	5.38	0.44	0.00	34.56	103.92	135.62
SI	0.00	0.00	28.33	0.00	1.06	0.01	0.06	0.00	0.02	0.00	2.60	1.08	0.01
SK	0.00	0.00	14.30	0.00	1.00	0.08	0.40	0.24	0.08	0.00	239.65	5.43	0.06
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TR	0.00	11.54	0.02	0.06	0.02	0.00	31.84	0.26	0.00	0.54	0.23	0.08	0.01
UA	0.00	0.00	1.40	0.00	0.53	0.26	2.66	122.15	0.08	0.00	33.32	6.63	0.30
UZ	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
SUM	6.3	88.6	723.8	43.1	540.2	904.8	1504.8	3589.8	290.1	24.7	6236.3	6981.4	536.0

Table 3.2. Matrix of B(a)P country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.00	0.00	0.00	0.01	0.00	0.00	9.17	0.15	0.47	0.00	0.00	1.77	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	13.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.06	0.00	1.92	0.21	0.00	0.03	18.60	55.88	0.03	0.00	39.11	0.00	0.00
AZ	0.00	0.00	0.00	0.00	0.00	15.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
BA	0.00	0.01	0.00	0.05	0.02	0.00	0.19	154.30	21.67	0.00	0.00	7.60	0.00	0.00
BE	0.00	0.62	0.00	90.76	9.05	0.00	0.00	0.00	0.00	0.29	0.00	0.05	0.00	0.00
BG	0.00	0.00	0.00	0.01	0.01	0.01	25.01	0.63	2.52	0.00	0.00	0.13	0.00	0.00
BY	0.94	0.04	1.27	0.50	0.74	0.01	0.01	0.44	5.35	0.07	0.00	0.15	0.00	0.01
CH	0.00	0.20	0.00	43.58	0.16	0.00	0.00	0.02	0.00	0.03	0.00	54.39	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.01	0.09	0.02	2.98	0.44	0.00	0.05	5.71	49.26	0.04	0.00	1.62	0.00	0.00
DE	0.02	1.79	0.12	175.97	29.05	0.00	0.01	0.76	4.47	1.76	0.00	19.46	0.00	0.00
DK	0.00	0.25	0.02	3.81	10.84	0.00	0.00	0.07	0.63	0.90	0.00	0.10	0.00	0.00
EE	278.10	0.02	36.47	0.29	0.61	0.00	0.00	0.04	0.32	0.06	0.00	0.03	0.00	0.00
ES	0.00	5213.83	0.00	36.79	0.44	0.00	0.00	0.13	0.01	0.29	0.00	3.59	0.00	0.00
FI	39.00	0.07	3229.77	0.68	1.93	0.00	0.00	0.04	0.37	0.22	0.00	0.05	0.00	0.00
FR	0.00	96.31	0.01	3793.46	40.36	0.00	0.00	0.29	0.04	4.85	0.00	33.58	0.00	0.00
GB	0.00	5.21	0.00	30.44	3188.10	0.00	0.00	0.01	0.08	232.18	0.01	0.02	0.00	0.00
GE	0.00	0.00	0.00	0.00	0.00	311.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
GR	0.00	0.00	0.00	0.01	0.00	0.00	1017.44	0.17	0.76	0.00	0.00	1.43	0.00	0.00
HR	0.00	0.03	0.00	0.11	0.02	0.00	0.17	957.66	77.32	0.00	0.00	15.09	0.00	0.00
HU	0.00	0.01	0.00	0.18	0.06	0.00	0.17	114.18	1649.40	0.01	0.00	1.73	0.00	0.00
IE	0.00	0.48	0.00	0.55	37.81	0.00	0.00	0.00	0.00	1829.38	0.01	0.00	0.00	0.00
IS	0.00	0.01	0.01	0.08	0.62	0.00	0.00	0.00	0.01	0.64	4.28	0.00	0.00	0.00
IT	0.00	1.57	0.00	18.83	0.11	0.00	1.00	25.80	2.69	0.02	0.00	4564.41	0.00	0.00
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	514.49	149.52
KZ	0.01	0.00	0.06	0.00	0.01	0.02	0.00	0.00	0.03	0.00	0.00	0.00	184.19	9363.95
LI	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
LT	1.09	0.03	0.82	0.52	0.97	0.00	0.00	0.19	1.71	0.10	0.00	0.07	0.00	0.00
LU	0.00	0.05	0.00	12.19	0.19	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00
LV	29.76	0.02	5.01	0.50	1.01	0.00	0.00	0.11	0.88	0.10	0.00	0.06	0.00	0.00
MC	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
MD	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.04	0.35	0.00	0.00	0.02	0.00	0.00
ME	0.00	0.00	0.00	0.00	0.00	0.00	0.21	1.26	1.07	0.00	0.00	2.31	0.00	0.00
MK	0.00	0.00	0.00	0.00	0.00	0.00	17.61	0.15	0.70	0.00	0.00	0.19	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
NL	0.00	0.51	0.00	25.97	21.49	0.00	0.00	0.01	0.04	0.67	0.00	0.08	0.00	0.00
NO	0.30	0.46	7.96	4.86	28.95	0.00	0.00	0.03	0.44	4.14	0.02	0.08	0.00	0.00
PL	0.31	0.20	0.65	4.52	5.03	0.00	0.08	5.78	84.98	0.39	0.00	1.34	0.00	0.00
PT	0.00	136.34	0.00	0.11	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00
RO	0.00	0.01	0.00	0.12	0.04	0.01	0.78	5.70	108.44	0.00	0.00	0.70	0.00	0.01
RS	0.00	0.00	0.00	0.04	0.03	0.00	2.56	35.44	57.40	0.00	0.00	1.01	0.00	0.00
RU	63.10	0.12	212.40	1.04	2.35	8.43	0.05	0.30	2.79	0.27	0.00	0.16	0.06	771.29
SE	3.42	0.45	85.34	6.70	18.82	0.00	0.02	0.13	1.41	1.71	0.01	0.28	0.00	0.00
SI	0.00	0.01	0.00	0.06	0.01	0.00	0.02	126.84	9.56	0.00	0.00	20.09	0.00	0.00
SK	0.00	0.02	0.01	0.26	0.08	0.00	0.07	5.33	246.57	0.01	0.00	0.53	0.00	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.42	4.27
TM	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.34
TR	0.00	0.00	0.00	0.01	0.00	7.36	13.16	0.04	0.16	0.00	0.00	0.11	0.00	0.02
UA	0.08	0.03	0.15	0.41	0.32	0.11	0.14	1.99	52.62	0.03	0.00	0.46	0.00	0.56
UZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.58	147.31
SUM	416.1	5458.9	3580.1	4258.4	3399.9	356.0	1088.0	1462.3	2440.4	2078.2	4.3	4772.0	772.7	10440.5

Table 3.2. Matrix of B(a)P country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT
AL	0.00	0.00	0.00	0.00	0.00	0.00	0.11	25.48	0.00	0.00	0.00	0.36	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.13	0.01	0.04	0.01	0.00	0.01	0.00	0.06	0.00	0.14	0.01	10.24	0.00
AZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
BA	0.00	0.02	0.00	0.00	0.00	0.03	0.10	0.19	0.00	0.01	0.00	7.37	0.00
BE	0.00	0.00	22.36	0.00	0.00	0.00	0.00	0.00	0.00	35.19	0.03	0.11	0.02
BG	0.00	0.02	0.00	0.01	0.00	7.38	0.00	8.67	0.00	0.00	0.00	2.61	0.00
BY	0.00	139.63	0.02	36.71	0.00	7.42	0.00	0.01	0.00	0.62	0.03	921.95	0.00
CH	0.56	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.02	0.01
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.01	0.09	0.13	0.05	0.00	0.05	0.00	0.13	0.00	0.44	0.01	508.61	0.00
DE	0.29	0.05	20.29	0.05	0.00	0.07	0.00	0.02	0.00	124.27	0.26	264.75	0.08
DK	0.00	0.07	0.20	0.02	0.00	0.05	0.00	0.00	0.00	9.34	1.38	31.42	0.02
EE	0.00	20.79	0.01	108.18	0.00	0.06	0.00	0.00	0.00	0.44	0.12	53.21	0.00
ES	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.03	138.77
FI	0.00	11.73	0.03	26.56	0.00	0.12	0.00	0.00	0.00	0.99	2.15	79.89	0.01
FR	0.01	0.00	7.06	0.00	0.02	0.00	0.00	0.00	0.00	5.56	0.07	0.29	1.63
GB	0.00	0.01	0.13	0.01	0.00	0.01	0.00	0.00	0.00	5.43	0.38	3.25	0.54
GE	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.08	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.46	0.00	28.11	0.01	0.00	0.00	1.10	0.00
HR	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.16	0.00	0.01	0.00	5.91	0.00
HU	0.00	0.04	0.00	0.01	0.00	0.11	0.00	0.41	0.00	0.04	0.00	62.10	0.00
IE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03	0.09	0.10
IS	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.22	0.50	0.01
IT	0.03	0.00	0.02	0.00	0.01	0.00	0.01	0.50	0.21	0.09	0.01	1.39	0.02
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.06	0.00	0.04	0.00	0.21	0.00	0.00	0.00	0.00	0.00	1.16	0.00
LI	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	994.78	0.03	64.94	0.00	0.62	0.00	0.00	0.00	0.89	0.06	467.05	0.00
LU	0.00	0.00	15.16	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.01	0.00
LV	0.00	202.17	0.03	999.40	0.00	0.26	0.00	0.00	0.00	0.88	0.10	175.80	0.00
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.04	0.00	0.01	0.00	797.41	0.00	0.00	0.00	0.00	0.00	3.81	0.00
ME	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.88	0.00	0.00	0.00	0.66	0.00
MK	0.00	0.00	0.00	0.00	0.00	0.01	0.00	251.64	0.00	0.00	0.00	0.59	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00
NL	0.00	0.00	1.97	0.00	0.00	0.00	0.00	0.00	0.00	353.74	0.07	0.95	0.02
NO	0.00	0.98	0.19	0.83	0.00	0.13	0.00	0.00	0.00	7.74	512.91	31.77	0.06
PL	0.01	20.38	0.24	2.85	0.00	5.49	0.00	0.15	0.00	4.73	0.12	22736.10	0.01
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1638.84
RO	0.00	0.10	0.00	0.03	0.00	161.36	0.00	0.90	0.00	0.03	0.00	33.46	0.00
RS	0.00	0.01	0.00	0.00	0.00	0.34	0.14	75.09	0.00	0.02	0.00	10.64	0.00
RU	0.00	80.15	0.05	127.40	0.00	6.52	0.00	0.01	0.00	1.53	1.12	523.12	0.02
SE	0.00	10.56	0.36	9.78	0.00	0.82	0.00	0.01	0.00	12.47	33.35	248.56	0.04
SI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.87	0.00
SK	0.00	0.11	0.01	0.03	0.00	0.15	0.00	0.17	0.00	0.07	0.00	589.43	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
TR	0.00	0.03	0.00	0.01	0.00	6.98	0.00	0.08	0.00	0.00	0.00	1.99	0.00
UA	0.00	2.72	0.02	0.78	0.00	303.87	0.00	0.07	0.00	0.22	0.01	713.40	0.00
UZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
SUM	1.1	1484.6	68.4	1377.7	0.0	1300.0	0.9	392.8	0.3	565.5	552.5	27494.7	1780.2

Table 3.2. Matrix of B(a)P country-to-country deposition from anthropogenic sources in 2019, kg/y (continued)

Receptors ↓ Emitters →

code	RO	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	SUM
AL	0.20	54.76	0.00	0.00	0.01	0.15	0.00	0.00	0.12	0.02	0.00	98.3
AM	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	15.93	0.04	0.00	90.9
AT	1.50	2.65	0.01	0.03	68.25	28.11	0.00	0.00	0.01	0.06	0.00	950.3
AZ	0.00	0.00	22.46	0.00	0.00	0.00	0.00	0.14	1.44	0.15	0.02	87.3
BA	1.58	52.40	0.01	0.01	1.68	4.60	0.00	0.00	0.01	0.05	0.00	671.8
BE	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	687.8
BG	192.50	56.82	0.66	0.00	0.06	0.90	0.00	0.00	35.76	6.74	0.00	1605.5
BY	7.86	0.52	87.61	0.70	0.18	13.82	0.00	0.00	0.37	1882.88	0.00	5972.3
CH	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	326.6
CY	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.56	0.01	0.00	28.8
CZ	3.10	4.91	0.09	0.09	2.87	120.36	0.00	0.00	0.03	0.32	0.00	4717.3
DE	0.69	0.63	0.07	1.11	0.61	4.38	0.00	0.00	0.01	0.87	0.00	7216.0
DK	0.26	0.13	0.12	3.05	0.03	0.98	0.00	0.00	0.00	0.46	0.00	471.4
EE	0.10	0.02	34.40	4.52	0.02	0.94	0.00	0.00	0.01	3.39	0.00	561.0
ES	0.00	0.00	0.00	0.00	0.08	0.01	0.00	0.00	0.00	0.00	0.00	5394.4
FI	0.20	0.03	211.59	40.28	0.02	1.36	0.00	0.00	0.02	4.42	0.00	3677.0
FR	0.00	0.01	0.00	0.02	0.19	0.02	0.00	0.00	0.00	0.00	0.00	4224.6
GB	0.03	0.02	0.02	0.15	0.00	0.14	0.00	0.00	0.00	0.06	0.00	3483.5
GE	0.07	0.00	31.48	0.00	0.00	0.00	0.00	0.00	30.14	2.20	0.00	384.7
GR	5.34	9.58	0.05	0.00	0.02	0.31	0.00	0.00	74.98	0.91	0.00	1190.2
HR	2.65	40.97	0.01	0.01	94.33	4.26	0.00	0.00	0.01	0.09	0.00	1301.3
HU	98.58	70.85	0.05	0.01	20.55	279.57	0.00	0.00	0.08	6.13	0.00	2388.8
IE	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1868.9
IS	0.00	0.00	0.01	0.04	0.00	0.02	0.00	0.00	0.00	0.01	0.00	7.4
IT	0.20	2.38	0.00	0.01	33.88	0.77	0.00	0.00	0.04	0.02	0.00	4700.4
KY	0.00	0.00	0.00	0.00	0.00	0.00	45.36	0.01	0.00	0.00	37.77	747.1
KZ	0.20	0.01	438.34	0.01	0.00	0.06	3.82	1.76	0.32	31.25	49.14	10075.3
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.3
LT	0.90	0.16	65.44	1.96	0.09	4.64	0.00	0.00	0.05	31.13	0.00	1802.7
LU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.7
LV	0.40	0.07	27.42	5.18	0.05	2.46	0.00	0.00	0.03	15.22	0.00	1547.5
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
MD	115.68	0.09	0.89	0.00	0.01	0.32	0.00	0.00	0.69	50.31	0.00	971.4
ME	0.20	36.45	0.00	0.00	0.02	0.33	0.00	0.00	0.02	0.01	0.00	50.9
MK	0.84	70.59	0.00	0.00	0.01	0.24	0.00	0.00	0.25	0.07	0.00	357.7
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
NL	0.01	0.01	0.00	0.04	0.00	0.03	0.00	0.00	0.00	0.00	0.00	673.6
NO	0.31	0.07	12.18	23.75	0.02	0.94	0.00	0.00	0.01	1.49	0.00	711.6
PL	26.89	6.02	56.60	2.61	2.69	532.25	0.00	0.00	0.21	96.79	0.00	25298.3
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1775.3
RO	4517.16	90.07	1.90	0.02	0.82	15.44	0.00	0.00	7.57	65.52	0.00	5120.2
RS	73.22	1657.42	0.05	0.01	0.40	7.29	0.00	0.00	0.25	0.57	0.00	1997.6
RU	7.07	0.32	45168.90	8.91	0.13	7.05	0.01	0.10	11.98	1327.99	0.06	48746.6
SE	1.73	0.26	12.61	1013.32	0.06	3.88	0.00	0.00	0.08	10.48	0.00	1767.9
SI	0.47	1.45	0.00	0.00	353.41	0.44	0.00	0.00	0.00	0.02	0.00	546.4
SK	18.69	8.46	0.10	0.02	1.73	1335.81	0.00	0.00	0.08	7.04	0.00	2476.0
TJ	0.00	0.00	0.00	0.00	0.00	0.00	591.47	0.20	0.00	0.00	26.15	634.5
TM	0.00	0.00	0.55	0.00	0.00	0.00	1.35	232.69	0.01	0.22	33.30	271.6
TR	18.18	0.40	12.23	0.00	0.01	0.14	0.00	0.00	9391.42	36.19	0.00	9533.1
UA	258.63	3.68	363.24	0.16	0.57	71.99	0.00	0.00	10.21	15934.10	0.00	17887.9
UZ	0.00	0.00	0.90	0.00	0.00	0.00	82.10	19.62	0.01	0.45	377.74	689.7
SUM	5355.5	2172.2	46550.1	1106.0	582.8	2444.0	724.1	254.5	9586.7	19517.7	524.2	

Table 3.3. Matrix of B(b)F country-to-country deposition from anthropogenic sources in 2020, kg/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	7.35	0.00	0.15	0.00	0.71	0.01	2.32	0.08	0.01	0.00	0.52	0.38	0.01
AM	0.00	55.67	0.00	1.92	0.00	0.00	0.02	0.02	0.00	0.00	0.01	0.01	0.00
AT	0.01	0.00	510.57	0.00	4.19	1.16	1.50	0.28	10.80	0.00	151.36	248.55	0.47
AZ	0.00	9.19	0.00	57.54	0.00	0.00	0.03	0.10	0.00	0.00	0.02	0.02	0.00
BA	0.11	0.00	6.18	0.00	507.88	0.16	1.94	0.45	0.12	0.00	19.42	6.81	0.17
BE	0.00	0.00	0.12	0.00	0.00	462.66	0.00	0.03	0.98	0.00	0.94	60.19	0.38
BG	0.07	0.01	1.33	0.00	2.95	0.09	1277.36	2.41	0.07	0.02	4.99	3.08	0.04
BY	0.00	0.01	6.15	0.01	1.64	2.91	1.62	5488.28	0.78	0.00	79.96	68.48	4.60
CH	0.00	0.00	7.09	0.00	0.02	0.69	0.00	0.01	166.29	0.00	0.75	98.92	0.08
CY	0.00	0.00	0.00	0.00	0.01	0.00	0.07	0.02	0.00	68.41	0.02	0.02	0.00
CZ	0.01	0.00	93.58	0.00	4.36	2.60	2.61	1.07	4.66	0.00	2570.61	411.73	1.09
DE	0.00	0.00	97.05	0.00	0.96	175.93	0.87	1.19	95.94	0.00	474.76	8583.93	25.06
DK	0.00	0.00	1.04	0.00	0.12	12.55	0.22	0.74	0.72	0.00	10.20	119.11	308.82
EE	0.00	0.00	1.15	0.00	0.16	1.81	0.06	40.51	0.27	0.00	12.41	24.39	3.74
ES	0.00	0.00	0.49	0.00	0.32	0.91	0.04	0.01	0.46	0.00	0.92	4.48	0.05
FI	0.00	0.00	2.29	0.00	0.28	4.68	0.19	49.87	0.63	0.00	29.72	52.70	9.21
FR	0.00	0.00	2.70	0.00	0.33	112.84	0.05	0.15	49.32	0.00	7.63	309.59	1.00
GB	0.00	0.00	0.57	0.00	0.07	17.04	0.12	0.47	0.50	0.00	5.48	34.35	2.82
GE	0.00	10.91	0.02	1.36	0.02	0.00	0.42	0.34	0.00	0.01	0.12	0.11	0.01
GR	0.61	0.00	0.57	0.00	0.99	0.07	80.66	0.84	0.04	0.07	2.08	1.74	0.04
HR	0.06	0.00	18.75	0.00	119.00	0.15	1.99	0.31	0.18	0.00	25.11	8.97	0.13
HU	0.03	0.00	49.72	0.00	21.56	0.34	5.01	1.93	0.39	0.00	79.82	19.15	0.18
IE	0.00	0.00	0.04	0.00	0.00	0.82	0.00	0.03	0.04	0.00	0.34	1.72	0.17
IS	0.00	0.00	0.05	0.00	0.01	0.73	0.01	0.31	0.02	0.00	0.74	3.14	0.48
IT	0.28	0.00	31.77	0.00	17.31	0.71	1.52	0.20	16.34	0.00	12.43	45.29	0.29
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.26	0.14	1.13	0.07	0.10	1.17	11.78	0.02	0.01	2.07	1.79	0.22
LI	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.01	0.63	0.00
LT	0.00	0.00	2.75	0.00	0.59	2.70	0.22	330.00	0.48	0.00	36.09	52.26	8.29
LU	0.00	0.00	0.02	0.00	0.00	9.38	0.00	0.00	0.25	0.00	0.18	14.17	0.02
LV	0.00	0.00	2.18	0.00	0.41	3.23	0.14	178.39	0.41	0.00	26.24	47.71	8.77
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.21	0.00	0.22	0.04	3.24	4.68	0.02	0.00	1.38	0.97	0.03
ME	0.54	0.00	0.26	0.00	10.34	0.02	1.10	0.09	0.01	0.00	0.93	0.58	0.02
MK	0.98	0.00	0.23	0.00	0.62	0.02	18.91	0.18	0.01	0.00	0.87	0.56	0.01
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.32	0.00	0.03	191.72	0.04	0.04	0.78	0.00	1.87	133.95	1.08
NO	0.00	0.00	1.87	0.00	0.19	19.16	0.54	8.77	1.15	0.00	21.22	125.21	45.81
PL	0.02	0.00	54.19	0.00	8.28	14.74	3.35	197.84	5.18	0.00	1345.12	623.54	15.81
PT	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00	0.01	0.00	0.01	0.19	0.00
RO	0.06	0.02	7.29	0.00	11.60	0.38	140.67	11.10	0.37	0.02	23.25	14.09	0.18
RS	0.56	0.00	4.33	0.00	49.08	0.22	65.95	1.38	0.13	0.00	15.86	7.76	0.13
RU	0.01	1.24	8.89	3.91	2.49	10.79	12.75	1482.26	1.66	0.06	98.98	148.82	19.53
SE	0.00	0.00	6.05	0.00	0.55	30.15	1.11	49.24	2.97	0.00	78.22	341.12	188.49
SI	0.01	0.00	35.09	0.00	3.91	0.06	0.52	0.06	0.12	0.00	6.59	5.23	0.04
SK	0.01	0.00	27.02	0.00	5.54	0.46	2.38	2.61	0.50	0.00	237.93	25.60	0.29
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.13	0.00	0.64	0.00	0.00	0.04	0.22	0.00	0.00	0.06	0.04	0.01
TR	0.02	16.93	0.41	0.37	0.56	0.09	62.57	6.32	0.06	4.59	2.58	2.27	0.12
UA	0.02	0.05	9.79	0.07	6.11	1.97	19.07	415.15	0.91	0.02	87.98	50.93	1.54
UZ	0.00	0.05	0.01	0.12	0.00	0.00	0.05	0.36	0.00	0.00	0.09	0.06	0.01
SUM	10.8	94.5	992.8	67.1	783.5	1084.2	1712.5	8290.1	364.2	73.2	5477.9	11704.3	649.2

Table 3.3. Matrix of B(b)F country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.00	0.12	0.00	0.15	0.02	0.00	15.35	0.74	1.88	0.01	0.00	7.13	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	24.95	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.05
AT	0.02	0.76	0.07	8.35	1.12	0.00	0.38	37.61	77.24	0.26	0.00	97.41	0.00	0.02
AZ	0.00	0.00	0.00	0.00	0.00	24.93	0.01	0.00	0.02	0.00	0.00	0.01	0.00	1.83
BA	0.01	0.42	0.02	0.77	0.21	0.00	1.15	178.61	49.47	0.06	0.00	30.23	0.00	0.01
BE	0.00	3.01	0.01	134.18	15.70	0.00	0.00	0.00	0.02	1.33	0.00	0.59	0.00	0.00
BG	0.01	0.10	0.02	0.34	0.13	0.11	42.37	3.87	13.52	0.03	0.00	2.95	0.00	0.46
BY	3.21	0.57	4.80	4.88	4.07	0.14	0.28	5.11	29.26	0.66	0.00	4.36	0.00	1.05
CH	0.00	1.60	0.02	65.77	0.66	0.00	0.00	0.13	0.06	0.18	0.00	105.43	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.01	0.02	0.00	0.00	0.06	0.00	0.00
CZ	0.06	0.77	0.22	11.99	1.90	0.00	0.48	19.55	100.22	0.37	0.00	12.20	0.00	0.02
DE	0.16	11.44	0.77	356.58	63.54	0.00	0.19	4.29	16.02	8.29	0.00	68.26	0.00	0.02
DK	0.04	1.42	0.11	12.81	19.05	0.00	0.08	0.35	2.24	3.02	0.00	0.88	0.00	0.01
EE	244.99	0.24	46.35	2.21	2.50	0.01	0.02	0.77	3.16	0.39	0.00	0.73	0.00	0.05
ES	0.00	5660.59	0.00	70.09	2.34	0.00	0.14	1.42	0.51	1.79	0.00	19.35	0.00	0.00
FI	60.64	0.88	2674.84	6.11	7.51	0.03	0.07	1.20	5.38	1.16	0.01	1.36	0.00	0.27
FR	0.02	223.54	0.12	4506.46	76.61	0.00	0.07	2.01	0.86	17.30	0.01	102.46	0.00	0.00
GB	0.02	15.31	0.07	61.64	2712.48	0.00	0.03	0.18	1.04	435.87	0.05	0.72	0.00	0.00
GE	0.00	0.00	0.01	0.01	0.01	326.15	0.07	0.03	0.13	0.00	0.00	0.08	0.00	0.31
GR	0.00	0.26	0.01	0.37	0.11	0.02	1234.35	1.56	4.75	0.03	0.00	10.45	0.00	0.05
HR	0.01	0.69	0.03	1.26	0.18	0.00	1.06	862.68	109.68	0.04	0.00	57.60	0.00	0.01
HU	0.03	0.37	0.07	1.58	0.41	0.01	1.49	146.98	1627.65	0.09	0.00	17.81	0.00	0.04
IE	0.00	2.29	0.03	3.12	49.81	0.00	0.00	0.01	0.07	2630.87	0.03	0.06	0.00	0.00
IS	0.03	0.17	0.23	0.91	2.35	0.00	0.00	0.02	0.12	2.39	14.25	0.03	0.00	0.00
IT	0.01	12.78	0.03	44.87	0.94	0.00	4.74	67.81	15.05	0.29	0.00	5864.04	0.00	0.01
KY	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	823.62	330.80
KZ	0.27	0.05	1.02	0.15	0.21	1.02	0.17	0.18	1.35	0.04	0.00	0.33	332.22	14414.50
LI	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00
LT	2.75	0.36	2.99	3.61	3.76	0.02	0.06	2.19	10.03	0.71	0.00	1.77	0.00	0.12
LU	0.00	0.27	0.00	17.55	0.46	0.00	0.00	0.00	0.00	0.07	0.00	0.13	0.00	0.00
LV	32.20	0.31	10.91	3.61	4.07	0.01	0.04	1.67	7.04	0.73	0.00	1.40	0.00	0.10
MC	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
MD	0.02	0.02	0.03	0.12	0.04	0.06	0.23	0.44	2.05	0.01	0.00	0.61	0.00	0.25
ME	0.00	0.10	0.00	0.09	0.03	0.00	0.92	2.61	3.51	0.01	0.00	7.14	0.00	0.00
MK	0.00	0.03	0.00	0.07	0.03	0.00	28.98	0.73	2.92	0.01	0.00	1.42	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00
NL	0.00	2.48	0.01	50.29	32.29	0.00	0.01	0.07	0.26	2.42	0.00	0.63	0.00	0.00
NO	1.40	3.37	16.32	24.31	58.82	0.01	0.18	0.43	3.85	13.71	0.11	1.26	0.00	0.06
PL	1.46	2.13	3.17	24.85	16.95	0.05	0.89	31.21	208.90	2.68	0.00	18.86	0.00	0.36
PT	0.00	188.47	0.00	0.87	0.15	0.00	0.00	0.01	0.01	0.14	0.00	0.16	0.00	0.00
RO	0.07	0.35	0.13	1.61	0.43	0.23	6.19	21.54	187.50	0.08	0.00	13.97	0.00	1.21
RS	0.01	0.23	0.03	0.72	0.31	0.01	9.12	50.01	104.19	0.09	0.00	9.59	0.00	0.10
RU	112.60	2.23	354.47	14.76	16.43	21.45	2.85	7.89	37.72	2.93	0.01	9.44	5.57	2777.63
SE	9.93	3.64	133.04	34.88	45.48	0.04	0.42	1.68	9.10	6.94	0.03	4.12	0.00	0.19
SI	0.00	0.28	0.01	0.59	0.07	0.00	0.19	135.67	17.48	0.02	0.00	45.68	0.00	0.01
SK	0.05	0.24	0.13	1.76	0.47	0.00	0.63	18.39	328.83	0.10	0.00	6.98	0.00	0.02
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.47	19.84
TM	0.00	0.00	0.01	0.00	0.01	0.31	0.01	0.00	0.04	0.00	0.00	0.01	0.20	35.11
TR	0.06	0.18	0.17	0.42	0.13	12.88	32.07	0.94	2.71	0.02	0.00	4.80	0.00	0.98
UA	0.76	0.66	1.52	4.87	2.35	1.14	3.21	15.40	134.86	0.41	0.00	13.57	0.00	9.77
UZ	0.01	0.00	0.02	0.00	0.01	0.13	0.00	0.00	0.06	0.00	0.00	0.01	104.05	394.73
SUM	470.9	6142.7	3251.8	5479.7	3144.2	413.8	1388.7	1626.0	3120.8	3135.5	14.5	6546.6	1286.1	17990.0

Table 3.3. Matrix of B(b)F country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT
AL	0.00	0.01	0.00	0.00	0.00	0.20	1.48	33.71	0.02	0.01	0.00	2.43	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.07	0.00
AT	0.14	0.13	0.22	0.08	0.00	0.30	0.01	0.47	0.00	0.53	0.08	44.18	0.04
AZ	0.00	0.01	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.29	0.00
BA	0.00	0.20	0.02	0.06	0.00	0.68	0.93	0.92	0.02	0.11	0.02	35.55	0.02
BE	0.00	0.01	32.99	0.01	0.00	0.01	0.00	0.00	0.00	35.08	0.27	1.81	0.15
BG	0.00	0.19	0.01	0.08	0.00	39.99	0.05	16.70	0.00	0.07	0.01	18.48	0.01
BY	0.00	204.19	0.22	50.12	0.00	50.70	0.00	0.13	0.00	2.85	0.59	1916.41	0.03
CH	0.52	0.00	0.17	0.01	0.00	0.00	0.00	0.00	0.00	0.26	0.07	0.55	0.07
CY	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.01	0.00	0.00	0.00	0.13	0.00
CZ	0.03	0.63	0.63	0.33	0.00	0.65	0.01	0.66	0.00	1.39	0.16	727.11	0.05
DE	0.40	0.51	43.21	0.37	0.00	0.83	0.00	0.21	0.00	153.38	2.51	460.93	0.65
DK	0.00	0.42	0.68	0.18	0.00	0.54	0.00	0.05	0.00	13.43	6.48	60.87	0.12
EE	0.00	40.12	0.11	129.00	0.00	1.00	0.00	0.02	0.00	1.55	1.08	177.61	0.03
ES	0.00	0.00	0.10	0.00	0.00	0.01	0.00	0.06	0.02	0.33	0.06	1.60	198.49
FI	0.00	35.63	0.28	56.10	0.00	2.93	0.00	0.04	0.00	3.90	11.53	343.57	0.12
FR	0.02	0.07	16.63	0.04	0.03	0.07	0.00	0.03	0.01	15.36	0.97	9.35	7.14
GB	0.00	0.21	0.64	0.08	0.00	0.25	0.00	0.03	0.00	11.46	3.04	23.77	2.03
GE	0.00	0.03	0.00	0.02	0.00	0.74	0.00	0.02	0.00	0.00	0.00	1.22	0.00
GR	0.00	0.09	0.01	0.03	0.00	6.26	0.02	48.16	0.06	0.05	0.01	9.49	0.01
HR	0.00	0.11	0.02	0.05	0.00	0.58	0.14	0.85	0.02	0.09	0.02	29.89	0.02
HU	0.00	0.51	0.05	0.16	0.00	1.50	0.04	1.96	0.00	0.24	0.03	209.12	0.02
IE	0.00	0.01	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.39	0.33	1.18	0.48
IS	0.00	0.15	0.03	0.10	0.00	0.07	0.00	0.00	0.00	0.53	1.99	4.51	0.06
IT	0.06	0.07	0.12	0.04	0.02	0.59	0.13	2.77	0.65	0.35	0.09	16.02	0.30
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	1.12	0.01	0.74	0.00	6.45	0.00	0.06	0.00	0.12	0.08	31.57	0.01
LI	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	927.97	0.19	74.41	0.00	5.19	0.00	0.06	0.00	2.73	0.59	907.55	0.02
LU	0.00	0.00	20.64	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.02	0.20	0.01
LV	0.00	253.52	0.20	859.10	0.00	3.02	0.00	0.03	0.00	2.84	0.98	463.80	0.03
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.36	0.00	0.13	0.00	1163.11	0.00	0.10	0.00	0.02	0.01	17.82	0.00
ME	0.00	0.02	0.00	0.01	0.00	0.13	3.94	2.09	0.01	0.01	0.00	3.79	0.01
MK	0.00	0.02	0.00	0.01	0.00	0.39	0.04	255.40	0.00	0.02	0.00	3.53	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00
NL	0.00	0.02	3.73	0.01	0.00	0.01	0.00	0.01	0.00	278.81	0.44	4.79	0.15
NO	0.00	4.92	1.04	3.56	0.00	2.35	0.00	0.09	0.00	17.06	1390.90	144.05	0.40
PL	0.03	41.05	1.33	9.37	0.00	26.46	0.02	1.12	0.00	13.44	1.44	25434.60	0.14
PT	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	1525.67
RO	0.00	1.17	0.05	0.45	0.00	337.14	0.06	5.30	0.01	0.26	0.04	143.68	0.02
RS	0.00	0.23	0.03	0.08	0.00	4.16	1.18	89.87	0.01	0.17	0.02	50.74	0.01
RU	0.01	201.95	0.68	238.84	0.00	94.30	0.01	0.77	0.00	9.42	9.91	1705.57	0.28
SE	0.01	32.29	1.86	26.73	0.00	8.97	0.00	0.20	0.00	27.03	121.74	681.13	0.36
SI	0.00	0.02	0.01	0.01	0.00	0.15	0.01	0.22	0.00	0.03	0.01	5.90	0.01
SK	0.00	0.83	0.07	0.27	0.00	1.23	0.01	0.82	0.00	0.34	0.05	906.64	0.02
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.02	0.00	0.01	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.66	0.00
TR	0.00	0.52	0.01	0.28	0.00	47.14	0.01	1.35	0.02	0.08	0.03	24.43	0.01
UA	0.00	13.09	0.20	4.55	0.00	700.20	0.02	1.31	0.00	1.39	0.28	1559.15	0.04
UZ	0.00	0.03	0.00	0.02	0.00	0.19	0.00	0.00	0.00	0.00	0.00	1.01	0.00
SUM	1.3	1762.5	126.2	1455.5	0.1	2508.9	8.1	465.6	1.0	595.7	1555.9	36186.8	1737.0

Table 3.3. Matrix of B(b)F country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	RO	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	SUM
AL	1.90	75.37	0.12	0.00	0.05	0.76	0.00	0.00	1.87	0.78	0.00	155.7
AM	0.06	0.01	1.14	0.00	0.00	0.00	0.00	0.02	36.13	1.27	0.00	121.4
AT	7.72	10.64	0.46	0.17	58.09	43.15	0.00	0.00	0.41	2.18	0.00	1321.1
AZ	0.14	0.02	42.46	0.00	0.00	0.02	0.00	1.32	11.00	3.96	0.29	153.4
BA	9.12	95.57	0.49	0.07	2.88	14.54	0.00	0.00	0.56	1.92	0.00	967.9
BE	0.02	0.01	0.02	0.07	0.00	0.07	0.00	0.00	0.00	0.09	0.00	750.7
BG	337.76	119.90	8.61	0.03	0.42	5.87	0.00	0.00	89.92	68.94	0.00	2063.4
BY	48.35	6.66	223.70	2.81	1.34	46.26	0.00	0.00	7.22	3807.80	0.00	12082.2
CH	0.02	0.03	0.01	0.03	0.09	0.05	0.00	0.00	0.00	0.04	0.00	449.6
CY	0.16	0.04	0.08	0.00	0.00	0.01	0.00	0.00	19.22	0.44	0.00	89.0
CZ	12.71	18.05	0.99	0.49	6.13	151.90	0.00	0.00	0.88	4.83	0.00	4167.7
DE	4.64	4.00	1.09	3.34	2.02	13.57	0.00	0.00	0.36	9.58	0.00	10686.8
DK	1.65	0.80	0.61	4.63	0.10	2.29	0.00	0.00	0.13	4.55	0.00	591.1
EE	1.53	0.48	67.06	9.23	0.24	4.99	0.00	0.00	0.30	26.97	0.00	847.2
ES	0.09	0.38	0.02	0.02	0.51	0.34	0.00	0.00	0.01	0.06	0.00	5966.0
FI	3.91	0.90	468.16	74.98	0.41	9.27	0.00	0.00	1.32	57.71	0.00	3979.8
FR	0.34	0.33	0.13	0.30	0.86	0.92	0.00	0.00	0.03	0.72	0.00	5466.4
GB	0.75	0.40	0.31	0.67	0.05	1.22	0.00	0.00	0.06	2.32	0.00	3336.1
GE	1.20	0.17	64.22	0.00	0.01	0.09	0.00	0.03	70.92	23.37	0.01	502.2
GR	28.24	35.06	2.13	0.02	0.18	2.08	0.00	0.00	174.50	19.61	0.00	1665.7
HR	11.94	74.13	0.57	0.06	64.90	14.26	0.00	0.00	0.42	2.82	0.00	1408.8
HU	142.92	135.40	1.48	0.07	19.65	405.38	0.00	0.00	1.35	27.70	0.00	2922.3
IE	0.04	0.02	0.04	0.07	0.00	0.08	0.00	0.00	0.00	0.12	0.00	2692.3
IS	0.10	0.04	0.33	0.33	0.01	0.17	0.00	0.00	0.03	1.05	0.00	35.5
IT	4.60	18.32	0.51	0.09	39.93	5.65	0.00	0.00	1.31	2.50	0.00	6230.8
KY	0.00	0.00	0.14	0.00	0.00	0.00	60.02	0.46	0.04	0.04	114.31	1329.4
KZ	7.12	0.57	1240.94	0.23	0.04	1.79	17.22	20.53	10.24	295.11	147.18	16551.4
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.0
LT	6.68	2.06	96.69	4.30	0.65	15.85	0.00	0.00	1.09	140.84	0.00	2648.6
LU	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	64.0
LV	4.12	1.28	61.31	10.03	0.51	11.04	0.00	0.00	0.73	87.20	0.00	2089.3
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
MD	158.02	1.21	6.73	0.03	0.09	1.86	0.00	0.00	6.05	197.87	0.00	1568.1
ME	1.61	54.06	0.07	0.01	0.07	1.30	0.00	0.00	0.49	0.35	0.00	96.3
MK	4.23	99.55	0.16	0.01	0.06	1.21	0.00	0.00	2.61	1.37	0.00	425.2
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.3
NL	0.13	0.16	0.03	0.12	0.02	0.18	0.00	0.00	0.03	0.17	0.00	707.1
NO	3.93	1.18	25.80	42.15	0.12	5.59	0.00	0.00	0.81	26.37	0.00	2018.1
PL	83.17	34.12	86.72	7.17	9.21	644.97	0.00	0.00	3.61	385.78	0.00	29363.3
PT	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1715.8
RO	4665.60	185.45	22.20	0.15	2.92	50.90	0.00	0.00	49.80	329.12	0.00	6236.7
RS	120.56	1811.16	2.07	0.05	1.41	24.75	0.00	0.00	3.19	11.74	0.00	2441.2
RU	102.91	11.71	61538.80	35.98	2.17	54.69	0.85	3.96	138.89	5143.11	4.16	74456.3
SE	12.62	2.70	60.27	1049.45	0.57	15.55	0.00	0.00	2.87	116.05	0.00	3107.8
SI	3.09	6.43	0.17	0.02	191.85	2.05	0.00	0.00	0.10	0.78	0.00	462.5
SK	45.53	30.45	1.38	0.14	4.11	1378.06	0.00	0.00	1.07	25.86	0.00	3056.8
TJ	0.00	0.00	0.05	0.00	0.00	0.00	576.69	2.37	0.02	0.01	75.83	695.3
TM	0.18	0.02	11.04	0.00	0.00	0.05	8.44	545.09	1.26	7.20	104.71	715.7
TR	77.06	6.08	90.75	0.07	0.15	2.09	0.00	0.02	13493.00	366.94	0.01	14262.3
UA	510.30	29.49	758.07	1.03	3.43	147.48	0.00	0.07	85.30	26204.90	0.03	30802.5
UZ	0.22	0.02	14.16	0.01	0.00	0.08	104.67	62.68	0.67	10.46	904.11	1598.1
SUM	6427.0	2874.4	64902.3	1248.4	415.3	3082.4	767.9	636.6	14219.8	37422.6	1350.6	

Table 3.4. Matrix of B(k)F country-to-country deposition from anthropogenic sources in 2020, kg/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	2.56	0.00	0.05	0.00	0.15	0.00	0.55	0.02	0.00	0.00	0.29	0.13	0.01
AM	0.00	24.23	0.00	0.72	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.00	243.86	0.00	1.15	0.37	0.44	0.05	5.76	0.00	94.51	100.98	0.22
AZ	0.00	3.80	0.00	38.65	0.00	0.00	0.01	0.02	0.00	0.00	0.01	0.01	0.00
BA	0.02	0.00	1.99	0.00	198.17	0.05	0.52	0.09	0.04	0.00	10.79	2.23	0.09
BE	0.00	0.00	0.03	0.00	0.00	256.10	0.00	0.00	0.49	0.00	0.48	26.08	0.16
BG	0.01	0.00	0.40	0.00	0.69	0.03	556.02	0.45	0.02	0.00	2.52	1.00	0.02
BY	0.00	0.00	1.94	0.00	0.37	0.95	0.39	1738.52	0.33	0.00	45.78	24.70	2.36
CH	0.00	0.00	3.05	0.00	0.00	0.23	0.00	0.00	118.35	0.00	0.30	43.10	0.03
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	28.53	0.01	0.00	0.00
CZ	0.00	0.00	39.35	0.00	1.26	0.81	0.86	0.20	2.34	0.00	2017.63	176.97	0.49
DE	0.00	0.00	41.30	0.00	0.25	68.06	0.25	0.20	57.55	0.00	324.11	4428.11	13.53
DK	0.00	0.00	0.39	0.00	0.03	5.06	0.07	0.14	0.35	0.00	7.13	54.99	228.78
EE	0.00	0.00	0.36	0.00	0.04	0.58	0.01	9.79	0.12	0.00	6.93	9.04	1.91
ES	0.00	0.00	0.14	0.00	0.07	0.19	0.01	0.00	0.21	0.00	0.45	1.28	0.02
FI	0.00	0.00	0.72	0.00	0.06	1.56	0.05	11.64	0.28	0.00	16.92	18.84	4.63
FR	0.00	0.00	0.79	0.00	0.06	44.79	0.01	0.01	30.99	0.00	3.45	129.74	0.34
GB	0.00	0.00	0.17	0.00	0.01	6.69	0.03	0.06	0.24	0.00	3.02	12.99	1.22
GE	0.00	4.32	0.01	0.54	0.00	0.00	0.12	0.08	0.00	0.00	0.07	0.04	0.00
GR	0.16	0.00	0.17	0.00	0.21	0.02	28.51	0.16	0.01	0.01	1.10	0.57	0.02
HR	0.01	0.00	6.73	0.00	43.73	0.05	0.62	0.06	0.07	0.00	14.44	3.03	0.07
HU	0.01	0.00	19.10	0.00	6.18	0.10	1.42	0.36	0.15	0.00	44.57	6.29	0.09
IE	0.00	0.00	0.01	0.00	0.00	0.25	0.00	0.01	0.01	0.00	0.21	0.55	0.08
IS	0.00	0.00	0.02	0.00	0.00	0.32	0.00	0.08	0.01	0.00	0.50	1.39	0.31
IT	0.06	0.00	11.63	0.00	4.14	0.20	0.24	0.03	8.70	0.00	6.18	14.57	0.12
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.06	0.04	0.83	0.01	0.03	0.30	2.57	0.01	0.00	1.15	0.60	0.11
LI	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.25	0.00
LT	0.00	0.00	0.89	0.00	0.14	0.91	0.05	93.91	0.21	0.00	20.92	20.03	4.72
LU	0.00	0.00	0.01	0.00	0.00	4.18	0.00	0.00	0.14	0.00	0.10	6.81	0.01
LV	0.00	0.00	0.71	0.00	0.10	1.08	0.03	47.29	0.19	0.00	15.06	18.32	4.70
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.06	0.00	0.04	0.01	1.01	0.87	0.01	0.00	0.76	0.33	0.02
ME	0.17	0.00	0.08	0.00	3.42	0.01	0.27	0.02	0.00	0.00	0.51	0.19	0.01
MK	0.30	0.00	0.07	0.00	0.14	0.01	7.15	0.03	0.00	0.00	0.49	0.20	0.01
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.10	0.00	0.01	95.80	0.01	0.00	0.42	0.00	1.03	68.88	0.55
NO	0.00	0.00	0.60	0.00	0.05	6.97	0.16	2.03	0.49	0.00	12.49	45.91	25.67
PL	0.00	0.00	19.66	0.00	2.17	4.85	0.94	53.04	2.39	0.00	916.82	253.14	7.93
PT	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.04	0.00
RO	0.01	0.00	2.14	0.00	2.76	0.11	51.66	1.99	0.13	0.00	11.64	4.51	0.09
RS	0.16	0.00	1.33	0.00	15.56	0.07	24.49	0.27	0.05	0.00	8.52	2.57	0.06
RU	0.00	0.36	2.61	1.67	0.50	3.43	3.39	370.96	0.67	0.01	53.31	51.22	9.50
SE	0.00	0.00	1.93	0.00	0.14	10.68	0.34	11.48	1.32	0.00	45.69	129.87	112.55
SI	0.00	0.00	16.65	0.00	1.08	0.02	0.15	0.01	0.05	0.00	3.66	1.87	0.02
SK	0.00	0.00	10.07	0.00	1.42	0.14	0.71	0.54	0.20	0.00	152.47	8.81	0.14
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.03	0.00	0.41	0.00	0.00	0.01	0.04	0.00	0.00	0.03	0.01	0.00
TR	0.00	5.60	0.11	0.11	0.09	0.03	22.05	1.43	0.02	1.05	1.37	0.76	0.06
UA	0.00	0.02	2.95	0.05	1.35	0.65	5.33	103.56	0.35	0.00	51.42	17.87	0.80
UZ	0.00	0.01	0.00	0.08	0.00	0.00	0.01	0.08	0.00	0.00	0.05	0.02	0.00
SUM	3.5	38.5	432.4	43.1	285.5	515.4	708.2	2452.1	233.1	29.6	3898.9	5688.8	421.4

Table 3.4. Matrix of B(k)F country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.00	0.00	0.00	0.03	0.01	0.00	5.53	0.19	0.62	0.00	0.00	1.63	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	7.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
AT	0.01	0.10	0.03	3.43	0.34	0.00	0.09	13.25	30.37	0.08	0.00	35.97	0.00	0.00
AZ	0.00	0.00	0.00	0.00	0.00	9.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
BA	0.00	0.02	0.01	0.22	0.06	0.00	0.30	69.51	16.30	0.02	0.00	7.96	0.00	0.00
BE	0.00	0.60	0.00	82.74	5.50	0.00	0.00	0.00	0.00	0.40	0.00	0.14	0.00	0.00
BG	0.00	0.01	0.01	0.11	0.04	0.04	14.62	1.07	3.91	0.01	0.00	0.51	0.00	0.12
BY	1.31	0.09	2.61	2.01	1.32	0.05	0.05	1.39	9.16	0.20	0.00	1.07	0.00	0.30
CH	0.00	0.23	0.01	38.49	0.20	0.00	0.00	0.03	0.01	0.06	0.00	43.99	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.02	0.12	0.10	5.28	0.60	0.00	0.15	6.46	37.04	0.12	0.00	3.88	0.00	0.00
DE	0.05	1.99	0.28	193.28	22.26	0.00	0.06	1.29	5.29	2.69	0.00	26.25	0.00	0.01
DK	0.01	0.30	0.05	6.40	7.29	0.00	0.03	0.12	0.81	1.02	0.00	0.30	0.00	0.00
EE	196.23	0.04	32.18	0.93	0.80	0.00	0.00	0.21	0.95	0.13	0.00	0.21	0.00	0.02
ES	0.00	2257.29	0.00	33.43	0.52	0.00	0.02	0.39	0.14	0.35	0.00	6.18	0.00	0.00
FI	38.65	0.17	2267.43	2.64	2.54	0.01	0.01	0.33	1.61	0.44	0.01	0.39	0.00	0.08
FR	0.01	56.70	0.07	3001.54	25.78	0.00	0.01	0.45	0.15	5.14	0.00	34.55	0.00	0.00
GB	0.01	3.27	0.05	33.41	1279.95	0.00	0.01	0.03	0.29	154.50	0.03	0.14	0.00	0.00
GE	0.00	0.00	0.00	0.00	0.00	136.46	0.01	0.01	0.04	0.00	0.00	0.01	0.00	0.09
GR	0.00	0.01	0.00	0.08	0.03	0.00	648.00	0.40	1.45	0.01	0.00	1.79	0.00	0.01
HR	0.00	0.04	0.01	0.33	0.06	0.00	0.27	387.51	41.15	0.02	0.00	16.33	0.00	0.00
HU	0.01	0.03	0.03	0.55	0.13	0.00	0.36	57.01	718.28	0.03	0.00	4.27	0.00	0.01
IE	0.00	0.29	0.03	1.13	17.88	0.00	0.00	0.00	0.02	1105.65	0.02	0.01	0.00	0.00
IS	0.02	0.02	0.21	0.47	0.89	0.00	0.00	0.01	0.04	0.88	8.43	0.01	0.00	0.00
IT	0.00	1.32	0.01	18.73	0.22	0.00	0.93	19.93	4.09	0.07	0.00	2766.75	0.00	0.00
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	325.81	116.69
KZ	0.13	0.01	0.63	0.06	0.07	0.26	0.02	0.04	0.42	0.01	0.00	0.05	132.44	6451.89
LI	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
LT	1.18	0.06	1.44	1.55	1.29	0.01	0.01	0.64	3.23	0.23	0.00	0.50	0.00	0.04
LU	0.00	0.05	0.00	11.86	0.15	0.00	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.00
LV	21.55	0.05	6.15	1.54	1.34	0.01	0.01	0.47	2.19	0.23	0.00	0.40	0.00	0.03
MC	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
MD	0.01	0.00	0.01	0.04	0.01	0.02	0.04	0.10	0.62	0.00	0.00	0.11	0.00	0.08
ME	0.00	0.00	0.00	0.02	0.01	0.00	0.26	0.81	1.14	0.00	0.00	2.07	0.00	0.00
MK	0.00	0.00	0.00	0.02	0.01	0.00	10.33	0.21	0.93	0.00	0.00	0.28	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
NL	0.00	0.52	0.00	28.15	12.29	0.00	0.00	0.02	0.07	0.81	0.00	0.20	0.00	0.00
NO	0.74	0.66	11.25	11.02	20.98	0.00	0.06	0.12	1.22	4.55	0.07	0.35	0.00	0.02
PL	0.58	0.35	1.56	10.63	5.58	0.02	0.23	9.90	74.67	0.82	0.00	5.61	0.00	0.11
PT	0.00	60.14	0.00	0.30	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.00
RO	0.02	0.03	0.05	0.54	0.13	0.08	1.32	6.00	65.44	0.02	0.00	2.79	0.00	0.36
RS	0.00	0.01	0.01	0.23	0.10	0.00	2.59	17.61	36.31	0.03	0.00	1.90	0.00	0.03
RU	63.22	0.41	225.94	5.99	5.30	7.09	0.50	1.94	10.97	0.98	0.01	2.04	1.49	1001.43
SE	5.41	0.68	89.64	15.59	16.13	0.01	0.13	0.48	2.89	2.36	0.02	1.22	0.00	0.06
SI	0.00	0.02	0.01	0.18	0.02	0.00	0.04	58.66	6.59	0.01	0.00	18.09	0.00	0.00
SK	0.02	0.03	0.06	0.69	0.15	0.00	0.16	5.43	129.32	0.03	0.00	1.74	0.00	0.01
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.03	6.65
TM	0.00	0.00	0.01	0.00	0.00	0.08	0.00	0.00	0.01	0.00	0.00	0.00	0.05	11.08
TR	0.03	0.01	0.10	0.11	0.04	3.87	9.39	0.18	0.79	0.00	0.00	0.54	0.00	0.25
UA	0.29	0.10	0.84	1.90	0.78	0.35	0.56	4.00	46.11	0.13	0.00	2.87	0.00	3.13
UZ	0.00	0.00	0.02	0.00	0.00	0.03	0.00	0.00	0.02	0.00	0.00	0.00	39.54	137.68
SUM	329.5	2385.8	2640.8	3515.7	1430.8	165.2	696.1	666.2	1254.7	1282.0	8.6	2993.4	507.4	7730.8

Table 3.4. Matrix of B(k)F country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT
AL	0.00	0.00	0.00	0.00	0.00	0.03	0.29	13.71	0.00	0.00	0.00	0.94	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
AT	0.23	0.05	0.08	0.02	0.00	0.06	0.00	0.13	0.00	0.22	0.02	14.40	0.01
AZ	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.11	0.00
BA	0.00	0.07	0.01	0.02	0.00	0.12	0.31	0.24	0.01	0.04	0.01	12.52	0.00
BE	0.00	0.00	21.97	0.00	0.00	0.00	0.00	0.00	0.00	19.92	0.06	0.46	0.03
BG	0.00	0.06	0.00	0.02	0.00	10.72	0.01	5.52	0.00	0.03	0.00	6.26	0.00
BY	0.00	88.11	0.08	17.58	0.00	13.89	0.00	0.03	0.00	1.20	0.13	818.21	0.00
CH	0.98	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.02	0.12	0.01
CY	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00
CZ	0.03	0.20	0.22	0.08	0.00	0.14	0.00	0.21	0.00	0.59	0.03	317.49	0.01
DE	0.66	0.12	21.33	0.07	0.00	0.20	0.00	0.06	0.00	80.41	0.57	190.98	0.12
DK	0.00	0.11	0.28	0.03	0.00	0.14	0.00	0.02	0.00	6.98	1.63	28.38	0.02
EE	0.00	16.76	0.04	50.00	0.00	0.27	0.00	0.00	0.00	0.65	0.26	69.96	0.01
ES	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.01	0.08	0.02	0.53	69.08
FI	0.00	14.26	0.10	19.52	0.00	0.84	0.00	0.01	0.00	1.66	3.30	135.98	0.02
FR	0.03	0.01	8.37	0.01	0.03	0.01	0.00	0.00	0.00	5.73	0.20	2.09	1.29
GB	0.00	0.05	0.27	0.02	0.00	0.05	0.00	0.01	0.00	5.19	0.71	7.49	0.36
GE	0.00	0.01	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.46	0.00
GR	0.00	0.03	0.00	0.01	0.00	1.34	0.00	18.16	0.01	0.02	0.00	3.44	0.00
HR	0.00	0.04	0.01	0.01	0.00	0.11	0.06	0.25	0.00	0.04	0.00	10.63	0.00
HU	0.00	0.15	0.02	0.04	0.00	0.32	0.01	0.53	0.00	0.10	0.01	68.16	0.00
IE	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.09	0.46	0.06
IS	0.00	0.07	0.01	0.04	0.00	0.02	0.00	0.00	0.00	0.29	0.69	2.06	0.01
IT	0.07	0.02	0.04	0.01	0.01	0.07	0.04	0.63	0.27	0.13	0.02	4.96	0.02
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.39	0.00	0.21	0.00	1.61	0.00	0.01	0.00	0.05	0.02	11.57	0.00
LI	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	467.93	0.07	27.78	0.00	1.39	0.00	0.01	0.00	1.22	0.13	394.09	0.00
LU	0.00	0.00	14.63	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.05	0.00
LV	0.00	115.88	0.07	381.16	0.00	0.79	0.00	0.01	0.00	1.22	0.21	190.28	0.00
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.10	0.00	0.03	0.00	397.04	0.00	0.02	0.00	0.01	0.00	6.74	0.00
ME	0.00	0.01	0.00	0.00	0.00	0.02	1.65	0.69	0.00	0.01	0.00	1.42	0.00
MK	0.00	0.01	0.00	0.00	0.00	0.06	0.00	116.31	0.00	0.01	0.00	1.31	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
NL	0.00	0.00	1.91	0.00	0.00	0.00	0.00	0.00	0.00	184.27	0.11	1.62	0.03
NO	0.01	1.98	0.37	1.22	0.00	0.56	0.00	0.03	0.00	7.97	488.15	58.34	0.07
PL	0.03	15.62	0.48	2.44	0.00	6.93	0.00	0.29	0.00	5.72	0.32	12897.30	0.03
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	751.41
RO	0.00	0.32	0.01	0.10	0.00	105.33	0.01	1.29	0.00	0.10	0.01	48.69	0.00
RS	0.00	0.07	0.01	0.02	0.00	0.91	0.41	37.60	0.00	0.07	0.00	17.68	0.00
RU	0.01	78.01	0.22	78.43	0.00	25.26	0.00	0.14	0.00	3.86	2.74	674.75	0.06
SE	0.02	13.07	0.68	9.02	0.00	2.24	0.00	0.06	0.00	12.35	34.49	286.69	0.06
SI	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.07	0.00	0.01	0.00	2.14	0.00
SK	0.00	0.27	0.02	0.06	0.00	0.28	0.00	0.22	0.00	0.14	0.01	380.40	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.01	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.25	0.00
TR	0.00	0.18	0.00	0.08	0.00	13.22	0.00	0.23	0.00	0.03	0.01	9.36	0.00
UA	0.00	4.31	0.07	1.13	0.00	221.85	0.00	0.26	0.00	0.59	0.06	668.56	0.01
UZ	0.00	0.01	0.00	0.01	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.40	0.00
SUM	2.2	818.3	71.5	589.2	0.0	806.2	2.8	196.8	0.4	341.4	534.0	17347.8	822.7

Table 3.4. Matrix of B(k)F country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	RO	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	SUM
AL	0.48	31.51	0.02	0.00	0.03	0.23	0.00	0.00	0.35	0.13	0.00	59.5
AM	0.02	0.00	0.36	0.00	0.00	0.00	0.00	0.01	13.39	0.41	0.00	46.8
AT	2.39	3.49	0.13	0.04	50.68	11.55	0.00	0.00	0.08	0.45	0.00	615.0
AZ	0.04	0.00	18.57	0.00	0.00	0.01	0.00	0.61	3.29	1.15	0.12	76.2
BA	2.54	35.67	0.13	0.02	1.97	4.25	0.00	0.00	0.08	0.34	0.00	366.7
BE	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	415.2
BG	123.88	40.97	2.88	0.01	0.27	1.50	0.00	0.00	28.30	18.21	0.00	820.2
BY	14.85	1.83	86.43	0.75	0.94	16.04	0.00	0.00	1.96	1460.54	0.00	4357.4
CH	0.00	0.01	0.00	0.01	0.04	0.01	0.00	0.00	0.00	0.01	0.00	249.5
CY	0.04	0.01	0.02	0.00	0.00	0.00	0.00	0.00	5.33	0.11	0.00	34.2
CZ	4.15	6.33	0.30	0.10	4.81	59.93	0.00	0.00	0.21	1.08	0.00	2689.6
DE	1.36	1.27	0.31	0.77	1.40	4.28	0.00	0.00	0.07	2.49	0.00	5493.3
DK	0.53	0.28	0.21	1.35	0.08	0.92	0.00	0.00	0.04	1.32	0.00	355.6
EE	0.47	0.13	27.63	2.76	0.17	1.67	0.00	0.00	0.09	7.79	0.00	439.2
ES	0.02	0.09	0.01	0.01	0.36	0.10	0.00	0.00	0.00	0.01	0.00	2371.0
FI	1.27	0.25	194.45	23.95	0.29	3.15	0.00	0.00	0.40	17.32	0.00	2785.8
FR	0.05	0.06	0.03	0.05	0.45	0.15	0.00	0.00	0.00	0.10	0.00	3353.2
GB	0.19	0.11	0.09	0.17	0.02	0.36	0.00	0.00	0.01	0.46	0.00	1511.7
GE	0.38	0.04	26.53	0.00	0.00	0.03	0.00	0.01	26.31	7.93	0.00	203.7
GR	8.87	10.89	0.46	0.01	0.11	0.61	0.00	0.00	55.48	4.10	0.00	786.3
HR	3.71	28.77	0.16	0.02	63.38	3.85	0.00	0.00	0.07	0.58	0.00	626.2
HU	54.36	51.31	0.43	0.02	17.56	120.99	0.00	0.00	0.35	4.99	0.00	1178.3
IE	0.01	0.01	0.02	0.02	0.00	0.03	0.00	0.00	0.00	0.03	0.00	1127.1
IS	0.03	0.01	0.16	0.11	0.00	0.07	0.00	0.00	0.01	0.34	0.00	17.5
IT	0.93	4.68	0.09	0.02	30.31	1.45	0.00	0.00	0.13	0.31	0.00	2902.1
KY	0.00	0.00	0.04	0.00	0.00	0.00	35.13	0.18	0.01	0.01	75.81	553.7
KZ	2.03	0.12	518.64	0.07	0.02	0.62	9.26	11.12	2.51	95.79	118.76	7364.5
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.0
LT	2.04	0.59	45.16	1.19	0.49	5.64	0.00	0.00	0.33	43.84	0.00	1143.8
LU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.3
LV	1.26	0.36	24.49	2.87	0.37	3.82	0.00	0.00	0.21	25.90	0.00	870.3
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
MD	60.11	0.30	2.61	0.01	0.05	0.53	0.00	0.00	1.63	65.75	0.00	539.1
ME	0.40	21.28	0.02	0.00	0.04	0.39	0.00	0.00	0.08	0.05	0.00	35.1
MK	1.20	39.19	0.04	0.00	0.04	0.34	0.00	0.00	0.56	0.27	0.00	179.5
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
NL	0.03	0.04	0.01	0.03	0.01	0.05	0.00	0.00	0.00	0.03	0.00	397.0
NO	1.15	0.35	11.57	12.86	0.09	1.95	0.00	0.00	0.25	7.26	0.00	739.6
PL	27.26	10.79	38.15	1.81	7.37	269.88	0.00	0.00	0.97	107.12	0.00	14763.5
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	812.0
RO	1942.23	63.44	8.32	0.04	1.79	13.77	0.00	0.00	13.37	86.08	0.00	2436.7
RS	43.56	804.82	0.63	0.01	0.82	6.76	0.00	0.00	0.82	2.61	0.00	1028.7
RU	30.45	2.87	30154.70	9.83	1.41	17.70	0.35	1.56	38.57	1746.27	1.94	34694.1
SE	3.91	0.83	23.17	408.10	0.42	5.69	0.00	0.00	0.86	32.67	0.00	1282.9
SI	0.98	2.12	0.05	0.00	223.51	0.54	0.00	0.00	0.02	0.16	0.00	336.8
SK	15.58	9.88	0.42	0.03	2.83	515.58	0.00	0.00	0.30	5.02	0.00	1243.2
TJ	0.00	0.00	0.01	0.00	0.00	0.00	398.77	1.07	0.00	0.00	49.46	464.0
TM	0.06	0.00	4.10	0.00	0.00	0.02	4.48	428.27	0.30	2.16	77.90	529.4
TR	26.55	1.46	33.52	0.02	0.07	0.66	0.00	0.01	5344.57	114.60	0.00	5592.6
UA	180.08	8.15	339.17	0.28	2.16	53.21	0.00	0.03	24.69	10781.10	0.01	12531.1
UZ	0.07	0.00	5.62	0.00	0.00	0.03	68.33	44.70	0.16	3.27	624.80	925.0
SUM	2559.6	1184.3	31569.9	467.3	414.4	1128.4	516.3	487.6	5566.1	14650.2	948.8	

Table 3.5. Matrix of I(cd)P country-to-country deposition from anthropogenic sources in 2019, kg/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	220.4	0.0	0.7	0.0	1.7	0.1	9.7	0.4	0.2	0.0	5.8	0.1	0.1
AM	0.1	5.3	0.0	0.7	0.0	0.0	0.3	0.1	0.0	0.0	0.3	0.0	0.0
AT	4.5	0.0	281.4	0.0	8.5	5.4	5.3	1.9	13.2	0.0	256.6	14.6	2.4
AZ	0.2	1.4	0.1	10.1	0.1	0.0	0.5	0.4	0.0	0.0	0.7	0.0	0.1
BA	23.3	0.0	10.0	0.0	205.8	0.9	8.8	2.1	0.6	0.0	69.7	1.2	1.0
BE	0.1	0.0	0.9	0.0	0.1	203.7	0.1	0.2	1.4	0.0	7.1	4.5	0.7
BG	11.9	0.0	4.3	0.0	5.6	1.0	653.2	4.8	0.5	0.1	36.8	0.9	1.0
BY	3.1	0.0	11.1	0.1	5.7	5.3	14.0	1348.4	2.2	0.0	150.8	5.1	13.8
CH	0.3	0.0	4.6	0.0	0.3	3.3	0.1	0.2	85.9	0.0	7.0	4.9	0.3
CY	0.3	0.0	0.1	0.0	0.1	0.0	0.6	0.1	0.0	13.7	0.7	0.0	0.0
CZ	4.1	0.0	65.8	0.0	9.9	7.6	7.5	3.6	5.6	0.0	2613.0	19.8	4.6
DE	3.4	0.0	67.8	0.0	4.8	171.4	4.8	6.2	55.6	0.0	750.1	277.9	32.3
DK	0.5	0.0	1.7	0.0	0.4	11.6	1.1	1.9	0.9	0.0	26.3	6.6	209.0
EE	0.6	0.0	2.7	0.0	1.0	2.9	1.4	24.5	0.7	0.0	33.5	1.8	6.5
ES	0.5	0.0	1.0	0.0	0.8	3.0	0.3	0.3	0.8	0.0	4.0	0.7	0.5
FI	2.3	0.0	6.7	0.0	3.0	8.1	6.6	47.5	1.8	0.0	79.7	4.2	15.1
FR	1.1	0.0	7.1	0.0	1.3	93.4	0.8	1.6	34.9	0.0	42.7	18.1	5.3
GB	0.2	0.0	1.6	0.0	0.3	28.9	0.5	1.1	1.4	0.0	18.2	4.9	8.9
GE	0.5	1.5	0.4	0.5	0.3	0.2	2.2	0.9	0.1	0.1	2.8	0.1	0.2
GR	39.5	0.0	2.9	0.0	4.0	0.8	57.9	3.7	0.8	0.2	26.0	0.6	0.9
HR	12.9	0.0	22.7	0.0	59.4	1.0	9.2	2.1	0.8	0.0	82.2	1.7	1.0
HU	11.2	0.0	36.5	0.0	27.1	1.9	29.1	4.7	1.2	0.0	158.8	3.0	1.4
IE	0.0	0.0	0.2	0.0	0.0	3.4	0.1	0.2	0.3	0.0	2.1	0.8	0.9
IS	0.0	0.0	0.1	0.0	0.1	0.5	0.1	0.3	0.1	0.0	1.4	0.2	0.7
IT	27.9	0.0	37.1	0.0	22.3	4.2	9.1	2.5	17.5	0.0	76.0	6.0	1.9
KY	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.1	0.0	0.0	0.3	0.0	0.0
KZ	3.7	1.3	3.8	2.8	3.0	3.3	19.7	33.4	1.3	0.2	36.5	1.9	4.8
LI	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0	0.0
LT	1.2	0.0	5.3	0.0	2.0	4.0	3.5	115.4	1.4	0.0	77.4	3.5	12.5
LU	0.0	0.0	0.1	0.0	0.0	6.0	0.0	0.0	0.3	0.0	0.8	0.6	0.0
LV	1.3	0.0	5.1	0.0	1.9	4.6	3.6	85.0	1.3	0.0	68.7	3.5	13.2
MC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MD	0.6	0.0	0.6	0.0	0.4	0.2	3.4	4.7	0.1	0.0	5.9	0.2	0.5
ME	35.2	0.0	0.8	0.0	6.6	0.1	3.5	0.3	0.1	0.0	6.8	0.1	0.1
MK	31.6	0.0	0.7	0.0	1.1	0.1	28.7	0.4	0.1	0.0	6.6	0.1	0.1
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NL	0.1	0.0	0.8	0.0	0.1	100.9	0.2	0.3	0.9	0.0	8.8	8.2	1.6
NO	1.2	0.0	4.0	0.0	1.2	13.2	3.3	10.6	1.4	0.0	53.7	5.0	37.9
PL	10.1	0.0	50.4	0.0	18.2	23.9	26.1	91.4	8.0	0.0	1431.6	36.1	46.3
PT	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.4	0.1	0.0
RO	15.1	0.0	13.9	0.0	15.0	2.8	99.8	18.3	1.4	0.1	109.9	2.8	3.1
RS	37.2	0.0	9.2	0.0	33.3	1.4	138.4	3.3	0.8	0.0	82.7	1.4	1.1
RU	30.4	3.1	56.4	5.5	35.2	44.1	135.2	857.4	14.8	0.8	607.1	27.5	82.8
SE	3.1	0.0	9.9	0.0	3.5	32.7	8.0	39.6	3.9	0.0	146.0	16.0	174.6
SI	2.2	0.0	26.2	0.0	5.1	0.4	2.5	0.5	0.5	0.0	24.9	0.9	0.3
SK	5.9	0.0	23.0	0.0	12.1	2.4	14.1	4.4	1.3	0.0	314.3	3.4	1.9
TJ	0.1	0.3	0.0	0.2	0.0	0.0	0.2	0.0	0.1	0.0	0.2	0.0	0.0
TM	0.3	0.4	0.2	1.0	0.2	0.2	1.1	1.1	0.1	0.0	2.0	0.1	0.3
TR	14.5	2.7	5.2	0.4	6.2	1.9	58.2	19.3	1.4	5.1	43.7	1.4	2.9
UA	11.1	0.2	16.1	0.2	11.7	5.9	48.9	188.9	2.1	0.2	181.4	6.0	12.0
UZ	0.3	0.3	0.3	0.6	0.2	0.2	1.4	1.4	0.1	0.0	2.2	0.1	0.2
SUM	574.5	16.8	799.4	22.3	519.7	807.3	1423.4	2935.7	268.2	20.7	7664.2	497.0	704.9

Table 3.5. Matrix of I(cd)P country-to-country deposition from anthropogenic sources in 2019, kg/y (continued)

Receptors	Emitters →													
code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.1	2.8	0.0	1.0	0.4	0.0	222.9	2.8	6.6	0.1	0.0	19.3	0.0	0.0
AM	0.0	0.1	0.0	0.0	0.0	17.8	1.9	0.1	0.2	0.0	0.0	0.4	0.0	0.2
AT	0.4	6.7	0.3	12.1	8.3	0.0	14.8	59.6	68.6	1.6	0.0	170.4	0.0	0.1
AZ	0.1	0.2	0.0	0.1	0.1	23.3	2.8	0.2	0.4	0.0	0.0	0.8	0.0	4.7
BA	0.4	5.2	0.3	2.5	1.9	0.1	35.9	132.0	82.6	0.5	0.0	65.7	0.0	0.1
BE	0.1	5.1	0.1	43.9	28.6	0.0	0.7	0.4	0.7	3.3	0.0	3.7	0.0	0.0
BG	0.5	4.0	0.4	2.3	2.0	1.5	559.5	11.7	36.2	0.4	0.0	19.7	0.0	1.4
BY	23.6	4.3	8.0	7.5	12.2	2.5	27.7	18.6	59.9	2.2	0.1	29.3	0.1	3.3
CH	0.1	5.9	0.1	27.3	4.0	0.0	0.9	2.0	1.1	0.7	0.0	134.2	0.0	0.0
CY	0.0	0.3	0.0	0.1	0.1	0.0	5.2	0.2	0.4	0.0	0.0	1.0	0.0	0.0
CZ	0.9	4.4	0.6	13.3	11.5	0.1	17.2	38.6	113.1	2.0	0.0	38.0	0.0	0.2
DE	3.1	31.9	2.1	166.4	138.8	0.1	15.8	19.1	41.4	21.8	0.0	119.3	0.0	0.3
DK	0.9	3.0	0.8	8.9	26.6	0.1	2.2	1.2	4.2	4.2	0.0	3.7	0.0	0.1
EE	353.8	1.8	28.8	3.3	6.7	0.3	2.3	3.8	9.9	1.2	0.0	7.7	0.0	0.4
ES	0.1	2258.4	0.1	30.3	12.2	0.0	3.6	3.1	2.0	5.2	0.0	25.8	0.0	0.0
FI	122.9	5.7	860.4	8.8	21.9	1.7	9.6	9.6	27.4	4.2	0.0	17.9	0.1	3.4
FR	0.7	266.2	0.5	990.6	125.4	0.0	5.2	8.2	6.6	20.4	0.0	188.2	0.0	0.1
GB	1.1	23.1	1.1	43.4	1088.9	0.0	1.1	1.0	2.3	156.0	0.0	7.3	0.0	0.1
GE	0.1	0.6	0.1	0.3	0.3	212.2	11.0	0.8	1.8	0.0	0.0	2.2	0.0	0.7
GR	0.5	10.2	0.4	3.2	1.9	0.5	4743.5	8.7	22.3	0.4	0.0	45.3	0.0	0.5
HR	0.4	8.0	0.2	3.5	1.9	0.1	25.5	481.2	116.2	0.5	0.0	118.4	0.0	0.1
HU	0.7	5.4	0.4	4.2	3.4	0.2	56.7	126.2	790.9	0.6	0.0	58.6	0.0	0.2
IE	0.2	8.5	0.1	6.8	60.3	0.0	0.3	0.1	0.2	541.1	0.0	0.9	0.0	0.0
IS	0.2	1.0	0.4	0.8	4.2	0.1	0.4	0.2	0.4	1.6	2.0	0.6	0.0	0.2
IT	0.5	62.0	0.4	40.8	7.6	0.1	89.5	106.0	47.7	1.9	0.0	3003.9	0.0	0.1
KY	0.0	0.4	0.0	0.1	0.1	1.2	1.3	0.1	0.2	0.0	0.0	1.1	198.9	69.0
KZ	7.7	9.0	5.4	5.4	8.7	26.0	55.5	8.4	19.4	2.0	0.0	30.5	162.6	4222.5
LI	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
LT	9.1	2.3	4.5	5.0	8.0	0.4	6.2	7.4	19.3	1.4	0.0	12.1	0.0	0.4
LU	0.0	0.6	0.0	4.9	1.5	0.0	0.1	0.0	0.1	0.2	0.0	0.6	0.0	0.0
LV	48.1	2.8	10.1	5.4	9.6	0.5	6.3	7.2	18.7	1.7	0.0	12.9	0.0	0.6
MC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MD	0.4	0.4	0.2	0.4	0.7	0.3	10.7	1.0	4.4	0.1	0.0	2.8	0.0	0.4
ME	0.1	1.7	0.0	0.5	0.3	0.0	21.1	4.5	8.1	0.1	0.0	14.5	0.0	0.0
MK	0.1	1.3	0.0	0.5	0.3	0.1	289.2	2.1	7.4	0.1	0.0	6.3	0.0	0.0
MT	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0
NL	0.2	4.4	0.1	25.7	37.6	0.0	0.5	0.4	1.0	4.1	0.0	2.5	0.0	0.0
NO	6.9	7.0	10.0	12.7	59.1	0.5	6.1	4.1	11.2	12.7	0.1	9.4	0.0	1.2
PL	7.4	11.5	5.4	27.4	45.9	0.7	48.6	64.4	241.3	8.9	0.2	79.1	0.0	1.1
PT	0.0	142.7	0.0	1.1	1.0	0.0	0.5	0.2	0.2	0.6	0.0	1.4	0.0	0.0
RO	1.9	6.6	1.0	5.4	5.4	2.2	159.7	36.7	201.0	1.1	0.1	54.4	0.0	2.7
RS	0.5	4.6	0.5	3.2	2.7	0.3	159.4	52.6	137.1	0.6	0.0	35.4	0.0	0.4
RU	400.4	56.1	241.2	62.2	115.2	107.7	415.9	107.4	267.1	23.1	0.5	276.4	45.5	2770.2
SE	31.0	10.9	64.1	27.3	87.5	1.2	12.2	10.6	32.8	15.8	0.0	22.7	0.1	1.9
SI	0.1	3.1	0.1	1.6	0.7	0.0	6.4	98.3	21.9	0.2	0.0	66.6	0.0	0.0
SK	0.8	2.8	0.5	4.0	4.2	0.2	26.5	37.0	270.8	0.7	0.0	30.9	0.0	0.2
TJ	0.0	0.5	0.0	0.2	0.1	0.7	0.7	0.1	0.1	0.0	0.0	2.2	9.3	5.1
TM	0.3	0.9	0.2	0.3	0.4	6.0	4.9	0.5	1.0	0.1	0.0	3.4	2.8	60.2
TR	2.6	18.5	1.6	5.3	4.6	20.6	518.1	15.0	33.5	1.1	0.0	62.9	0.0	3.0
UA	11.6	7.9	6.1	9.5	15.2	10.3	148.9	32.1	161.0	2.9	0.4	66.9	0.1	13.6
UZ	0.3	0.8	0.3	0.4	0.5	4.5	5.1	0.6	1.2	0.1	0.0	3.1	51.4	161.6
SUM	1040.9	3021.6	1257.0	1630.0	1978.6	443.9	7760.5	1526.1	2901.9	847.5	3.6	4880.9	471.1	7330.3

Table 3.5. Matrix of I(cd)P country-to-country deposition from anthropogenic sources in 2019, kg/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT
AL	0.0	0.1	0.0	0.1	0.0	0.7	0.4	20.6	0.0	0.1	0.0	9.4	0.3
AM	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	1.0	0.0
AT	0.3	1.0	0.8	0.6	0.0	0.6	0.2	1.4	0.0	2.9	0.5	82.1	0.5
AZ	0.0	0.1	0.0	0.1	0.0	0.4	0.0	0.1	0.0	0.0	0.0	3.4	0.0
BA	0.0	0.9	0.1	0.5	0.0	1.2	1.9	3.0	0.0	0.5	0.2	72.0	0.4
BE	0.0	0.2	6.7	0.1	0.0	0.1	0.0	0.0	0.0	16.4	0.2	7.1	0.5
BG	0.0	1.2	0.1	0.7	0.0	23.3	0.4	15.9	0.0	0.5	0.3	73.7	0.4
BY	0.0	125.9	0.4	50.9	0.0	46.8	0.2	2.2	0.0	3.8	2.5	1149.1	0.4
CH	0.9	0.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	1.2	0.1	6.7	0.5
CY	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	1.3	0.0
CZ	0.1	2.2	1.2	1.3	0.0	1.1	0.3	2.1	0.0	4.5	0.8	446.5	0.4
DE	0.7	5.0	25.4	3.8	0.0	2.1	0.2	1.3	0.0	105.0	4.6	486.9	2.9
DK	0.0	1.7	0.6	1.0	0.0	1.0	0.0	0.3	0.0	9.3	3.2	78.2	0.3
EE	0.0	30.6	0.2	88.7	0.0	3.2	0.0	0.4	0.0	1.7	1.8	157.3	0.2
ES	0.0	0.1	0.2	0.1	0.0	0.1	0.0	0.1	0.0	1.0	0.2	4.2	200.9
FI	0.0	35.1	0.5	51.4	0.0	12.2	0.1	1.7	0.0	4.9	11.6	330.5	0.6
FR	0.1	1.0	12.9	0.7	0.0	0.5	0.0	0.3	0.0	19.3	1.3	46.2	19.2
GB	0.0	1.0	1.1	0.9	0.0	0.4	0.0	0.1	0.0	13.8	4.3	30.3	3.2
GE	0.0	0.3	0.0	0.2	0.0	1.6	0.0	0.4	0.0	0.1	0.0	9.7	0.1
GR	0.0	1.0	0.1	0.7	0.0	11.1	0.3	36.5	0.1	0.4	0.3	55.2	1.1
HR	0.0	1.0	0.1	0.5	0.0	1.1	0.5	2.6	0.0	0.6	0.2	75.0	0.5
HU	0.0	1.7	0.3	0.9	0.0	3.7	0.7	7.4	0.0	1.1	0.3	225.4	0.4
IE	0.0	0.2	0.2	0.2	0.0	0.1	0.0	0.0	0.0	1.6	0.4	3.6	1.5
IS	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.3	1.3	4.0	0.3
IT	0.2	1.1	0.6	0.7	0.0	1.7	0.6	5.3	0.5	1.9	0.5	72.1	4.4
KY	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.8	0.0
KZ	0.0	8.8	0.2	6.7	0.0	19.0	0.1	3.3	0.0	2.0	2.1	172.5	1.2
LI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
LT	0.0	449.9	0.3	49.6	0.0	8.5	0.1	0.8	0.0	2.7	1.5	577.9	0.2
LU	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.5	0.0
LV	0.0	160.6	0.4	482.6	0.0	7.5	0.1	0.8	0.0	2.8	2.2	376.0	0.3
MC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MD	0.0	1.0	0.0	0.5	0.0	186.2	0.0	0.5	0.0	0.2	0.1	34.8	0.0
ME	0.0	0.1	0.0	0.1	0.0	0.3	2.4	2.4	0.0	0.1	0.0	8.9	0.1
MK	0.0	0.1	0.0	0.1	0.0	1.2	0.1	93.9	0.0	0.1	0.0	11.2	0.1
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
NL	0.0	0.3	1.6	0.2	0.0	0.1	0.0	0.1	0.0	104.7	0.5	11.8	0.5
NO	0.0	8.8	0.7	7.4	0.0	4.3	0.0	0.7	0.0	9.2	268.0	129.9	0.9
PL	0.1	32.7	2.0	12.6	0.0	24.2	0.6	6.6	0.0	16.3	5.6	10008.4	1.0
PT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	665.3
RO	0.0	4.9	0.3	2.7	0.0	113.2	0.8	12.6	0.0	1.5	0.9	314.1	0.5
RS	0.0	1.2	0.2	0.7	0.0	5.9	2.9	46.7	0.0	0.7	0.3	116.9	0.4
RU	0.2	231.8	3.1	270.3	0.0	204.0	1.3	21.9	0.1	27.6	39.5	2785.0	7.6
SE	0.0	37.5	1.8	33.1	0.0	12.1	0.1	2.2	0.0	22.0	64.8	537.0	1.1
SI	0.0	0.2	0.1	0.1	0.0	0.2	0.1	0.6	0.0	0.2	0.1	18.9	0.2
SK	0.0	1.9	0.3	1.1	0.0	2.2	0.4	3.9	0.0	1.4	0.4	582.5	0.2
TJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.0
TM	0.0	0.3	0.0	0.2	0.0	1.0	0.0	0.2	0.0	0.1	0.1	9.9	0.1
TR	0.0	5.7	0.2	3.5	0.0	48.8	0.4	9.7	0.1	1.1	0.8	167.6	2.7
UA	0.0	30.1	0.4	15.7	0.0	248.3	0.5	8.0	0.0	4.2	2.8	1253.1	1.3
UZ	0.0	0.4	0.0	0.3	0.0	1.1	0.0	0.3	0.0	0.1	0.1	10.0	0.1
SUM	3.0	1187.7	69.7	1091.7	0.1	1001.5	15.8	317.5	1.2	388.7	425.1	20559.8	923.1

Table 3.5. Matrix of I(cd)P country-to-country deposition from anthropogenic sources in 2019, kg/y (continued)

Receptors ↓ Emitters →

code	RO	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	SUM
AL	9.4	49.2	1.8	0.1	0.2	2.3	0.0	0.0	13.0	3.6	0.0	606.6
AM	0.7	0.3	4.4	0.0	0.0	0.1	0.0	0.0	52.3	2.3	0.0	89.1
AT	12.9	19.1	6.0	0.9	25.0	28.2	0.0	0.0	5.5	7.2	0.0	1132.5
AZ	1.6	0.5	45.9	0.0	0.0	0.2	0.1	0.3	45.4	10.4	0.2	155.3
BA	24.4	70.6	5.7	0.6	2.8	20.6	0.0	0.0	9.4	11.3	0.0	876.7
BE	0.4	0.3	0.8	0.2	0.1	0.5	0.0	0.0	0.3	0.8	0.0	340.0
BG	275.2	89.6	47.2	0.6	0.9	13.4	0.0	0.0	230.2	89.1	0.0	2222.3
BY	142.1	25.2	364.4	7.4	2.5	40.3	0.1	0.1	113.4	1926.8	0.1	5763.1
CH	0.3	0.4	0.7	0.1	0.4	0.6	0.0	0.0	0.2	0.7	0.0	296.8
CY	1.4	0.6	0.8	0.0	0.0	0.2	0.0	0.0	32.1	2.2	0.0	62.4
CZ	25.3	34.0	11.7	1.8	5.3	86.3	0.0	0.0	7.6	13.8	0.0	3627.5
DE	18.4	14.4	25.2	6.3	3.5	27.4	0.0	0.0	7.3	25.1	0.0	2699.6
DK	5.2	1.9	7.7	6.3	0.2	3.2	0.0	0.0	2.3	10.8	0.0	449.1
EE	15.4	4.1	85.4	9.5	0.5	6.0	0.0	0.0	7.9	49.4	0.0	957.7
ES	1.1	1.1	1.5	0.2	0.5	0.8	0.0	0.0	0.6	1.5	0.0	2566.6
FI	55.7	14.0	424.6	48.6	1.3	17.3	0.1	0.1	40.3	161.5	0.2	2481.1
FR	3.2	2.0	5.9	1.5	1.5	3.4	0.0	0.0	2.0	6.3	0.0	1945.8
GB	2.3	1.3	6.8	2.6	0.1	1.6	0.0	0.0	1.7	5.2	0.0	1468.3
GE	7.1	2.0	62.3	0.1	0.1	0.9	0.0	0.0	120.3	26.5	0.0	471.5
GR	76.1	49.9	23.3	0.5	0.7	8.9	0.0	0.0	331.8	51.0	0.0	5624.0
HR	23.2	54.0	5.6	0.4	24.8	23.2	0.0	0.0	9.0	10.6	0.0	1182.0
HU	155.0	129.9	14.8	0.6	10.5	147.8	0.0	0.0	26.1	35.9	0.0	2084.8
IE	0.3	0.1	1.6	0.3	0.0	0.2	0.0	0.0	0.3	0.7	0.0	637.7
IS	0.6	0.2	3.6	0.4	0.0	0.2	0.0	0.0	1.3	1.7	0.0	30.1
IT	20.7	30.1	7.2	0.7	21.9	16.6	0.0	0.0	13.3	13.5	0.0	3778.7
KY	0.7	0.3	4.7	0.0	0.0	0.1	25.6	0.7	7.6	1.3	29.1	345.1
KZ	79.0	17.5	1891.4	3.9	1.0	10.5	37.6	16.1	268.6	603.9	89.8	7913.7
LI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
LT	33.4	8.3	130.0	6.4	1.0	13.3	0.0	0.0	15.0	148.4	0.0	1749.7
LU	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	23.4
LV	32.5	8.1	105.5	11.0	1.0	11.6	0.0	0.0	16.4	128.8	0.0	1660.3
MC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
MD	88.5	2.8	22.5	0.3	0.1	2.5	0.0	0.0	25.4	100.3	0.0	504.1
ME	5.5	32.0	1.0	0.1	0.2	2.5	0.0	0.0	4.5	2.3	0.0	167.0
MK	14.9	53.5	2.5	0.1	0.2	2.7	0.0	0.0	22.5	5.3	0.0	585.5
MT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
NL	0.6	0.4	1.3	0.4	0.1	0.6	0.0	0.0	0.3	1.0	0.0	323.1
NO	20.0	5.4	50.9	32.1	0.6	7.4	0.0	0.0	18.6	49.2	0.0	886.9
PL	181.9	76.5	249.1	15.7	8.4	310.3	0.0	0.0	41.4	315.8	0.0	13593.3
PT	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	815.2
RO	2395.8	143.9	106.3	1.5	3.4	60.7	0.0	0.0	204.2	332.4	0.0	4460.1
RS	156.3	696.7	15.5	0.7	2.1	36.1	0.0	0.0	51.5	38.1	0.0	1879.1
RU	831.3	167.7	41351.7	86.1	13.9	151.0	20.5	12.9	1683.8	6356.8	29.4	61086.4
SE	51.8	16.9	155.9	507.0	1.4	22.5	0.1	0.0	40.0	164.0	0.1	2427.0
SI	4.6	7.8	1.3	0.1	57.6	5.3	0.0	0.0	2.4	2.1	0.0	364.3
SK	83.5	58.6	12.0	0.9	3.9	466.4	0.0	0.0	14.2	28.3	0.0	2023.7
TJ	0.3	0.2	2.2	0.0	0.0	0.1	181.2	1.1	4.9	0.6	13.2	224.6
TM	4.1	1.0	56.7	0.2	0.1	0.6	14.1	77.2	35.0	22.4	33.5	344.7
TR	201.2	44.3	195.3	1.6	1.5	15.1	0.0	0.1	8765.1	453.7	0.1	10768.6
UA	619.7	65.4	967.0	6.2	3.9	94.4	0.2	0.5	515.6	8420.2	0.4	13229.4
UZ	4.8	1.3	64.8	0.2	0.1	0.6	51.7	13.5	30.5	28.2	195.0	640.6
SUM	5688.7	2003.4	46552.5	764.5	203.3	1664.1	331.4	123.0	12841.3	19671.5	391.4	

Table 3.6. Matrix of PCDD/Fs country-to-country deposition from anthropogenic sources in 2020, g TEQ/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	53.96	0.00	0.04	0.00	0.30	0.01	0.27	0.01	0.01	0.00	0.03	0.07	0.01
AM	0.01	2.83	0.00	0.28	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00
AT	0.10	0.00	29.73	0.00	0.33	0.13	0.07	0.01	0.85	0.00	1.62	4.74	0.12
AZ	0.02	0.50	0.01	5.29	0.02	0.01	0.05	0.01	0.01	0.00	0.01	0.03	0.01
BA	1.15	0.00	0.43	0.00	35.91	0.04	0.20	0.01	0.04	0.00	0.29	0.35	0.05
BE	0.00	0.00	0.01	0.00	0.00	27.60	0.00	0.00	0.05	0.00	0.03	3.05	0.09
BG	0.65	0.00	0.19	0.00	0.75	0.04	80.54	0.06	0.04	0.00	0.18	0.30	0.05
BY	0.07	0.00	0.28	0.01	0.25	0.20	0.23	31.21	0.07	0.00	0.82	1.70	0.77
CH	0.01	0.00	0.40	0.00	0.01	0.06	0.01	0.00	11.29	0.00	0.02	1.85	0.02
CY	0.03	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.00	0.21	0.00	0.01	0.00
CZ	0.08	0.00	4.10	0.00	0.47	0.21	0.15	0.03	0.27	0.00	30.54	7.67	0.27
DE	0.05	0.00	4.28	0.00	0.11	9.71	0.06	0.06	4.53	0.00	4.12	202.85	4.11
DK	0.01	0.00	0.05	0.00	0.02	0.58	0.02	0.01	0.03	0.00	0.10	3.02	44.96
EE	0.01	0.00	0.06	0.00	0.03	0.08	0.02	0.28	0.02	0.00	0.12	0.53	0.44
ES	0.30	0.00	0.11	0.00	0.23	0.26	0.13	0.01	0.13	0.00	0.08	0.70	0.12
FI	0.05	0.00	0.18	0.00	0.11	0.24	0.10	0.42	0.08	0.00	0.34	1.38	1.00
FR	0.19	0.00	0.38	0.00	0.27	7.34	0.12	0.03	3.45	0.00	0.26	11.42	0.42
GB	0.02	0.00	0.05	0.00	0.03	1.67	0.03	0.02	0.06	0.00	0.08	2.05	1.00
GE	0.04	0.55	0.02	0.22	0.03	0.01	0.14	0.01	0.01	0.00	0.01	0.04	0.01
GR	4.92	0.00	0.13	0.00	0.47	0.04	6.06	0.04	0.04	0.00	0.10	0.24	0.05
HR	0.53	0.00	1.18	0.00	9.13	0.05	0.15	0.01	0.06	0.00	0.44	0.51	0.06
HU	0.20	0.00	2.63	0.00	2.16	0.08	0.34	0.06	0.07	0.00	1.56	1.00	0.12
IE	0.00	0.00	0.01	0.00	0.01	0.13	0.01	0.00	0.01	0.00	0.01	0.21	0.10
IS	0.01	0.00	0.02	0.00	0.02	0.09	0.02	0.01	0.01	0.00	0.03	0.22	0.15
IT	2.79	0.00	1.81	0.00	2.71	0.17	0.40	0.03	1.36	0.00	0.36	1.72	0.16
KY	0.02	0.01	0.01	0.02	0.01	0.00	0.03	0.00	0.01	0.00	0.01	0.03	0.01
KZ	0.33	0.14	0.31	0.50	0.40	0.27	0.90	0.51	0.16	0.00	0.37	1.38	0.55
LI	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.01	0.00
LT	0.02	0.00	0.12	0.00	0.07	0.13	0.04	3.13	0.04	0.00	0.33	1.12	1.30
LU	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.01	0.00	0.00	0.48	0.00
LV	0.01	0.00	0.12	0.00	0.06	0.14	0.03	1.13	0.04	0.00	0.26	1.05	1.09
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.03	0.00	0.04	0.00	0.06	0.01	0.41	0.10	0.01	0.00	0.06	0.10	0.03
ME	4.08	0.00	0.03	0.00	1.43	0.01	0.10	0.00	0.01	0.00	0.03	0.05	0.01
MK	4.52	0.00	0.04	0.00	0.19	0.01	1.19	0.01	0.01	0.00	0.04	0.07	0.01
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.01	0.00	0.00	10.09	0.00	0.00	0.03	0.00	0.03	6.49	0.24
NO	0.07	0.00	0.14	0.00	0.09	0.94	0.12	0.11	0.09	0.00	0.25	2.63	4.47
PL	0.18	0.00	1.91	0.00	0.91	0.78	0.36	2.29	0.31	0.00	18.72	15.09	2.74
PT	0.02	0.00	0.01	0.00	0.01	0.05	0.01	0.00	0.01	0.00	0.01	0.12	0.02
RO	0.66	0.00	0.64	0.01	1.94	0.11	11.59	0.22	0.11	0.00	0.59	0.88	0.15
RS	3.60	0.00	0.39	0.00	5.72	0.05	3.51	0.03	0.05	0.00	0.37	0.45	0.07
RU	1.13	0.28	1.61	1.06	1.76	1.66	4.20	12.13	0.67	0.01	2.50	8.72	5.00
SE	0.08	0.00	0.28	0.00	0.14	1.21	0.16	0.32	0.18	0.00	0.62	6.21	19.79
SI	0.05	0.00	1.89	0.00	0.26	0.02	0.03	0.00	0.04	0.00	0.13	0.25	0.02
SK	0.10	0.00	1.45	0.00	0.68	0.06	0.21	0.05	0.06	0.00	4.24	0.83	0.11
TJ	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00
TM	0.07	0.06	0.04	0.35	0.06	0.03	0.16	0.04	0.02	0.00	0.04	0.14	0.05
TR	1.17	0.82	0.29	0.14	0.73	0.12	7.78	0.28	0.13	0.09	0.26	0.76	0.20
UA	0.40	0.02	0.80	0.05	1.06	0.30	2.65	4.14	0.17	0.00	1.79	2.34	0.66
UZ	0.05	0.03	0.04	0.11	0.05	0.03	0.12	0.04	0.02	0.00	0.04	0.14	0.05
SUM	81.8	5.3	56.3	8.1	69.0	65.1	122.8	56.9	24.7	0.3	71.8	295.0	90.7

Table 3.6. Matrix of PCDD/Fs country-to-country deposition from anthropogenic sources in 2020, g TEQ/y (continued)

Receptors ↓ Emitters →

code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.00	0.22	0.00	0.06	0.03	0.00	0.69	0.15	0.23	0.01	0.00	2.72	0.00	0.00
AM	0.00	0.02	0.00	0.01	0.00	0.91	0.01	0.01	0.01	0.00	0.00	0.07	0.00	0.02
AT	0.00	0.52	0.01	0.44	0.21	0.00	0.02	1.59	3.43	0.03	0.00	7.26	0.00	0.00
AZ	0.00	0.06	0.00	0.02	0.02	1.15	0.02	0.01	0.03	0.00	0.00	0.15	0.00	0.30
BA	0.00	0.43	0.00	0.14	0.09	0.00	0.05	8.51	2.64	0.01	0.00	5.85	0.00	0.00
BE	0.00	0.42	0.00	3.37	1.15	0.00	0.00	0.00	0.01	0.05	0.00	0.12	0.00	0.00
BG	0.00	0.35	0.01	0.12	0.10	0.02	1.24	0.45	1.39	0.01	0.00	1.76	0.00	0.04
BY	0.09	0.36	0.15	0.23	0.51	0.02	0.04	0.29	1.16	0.05	0.00	1.05	0.01	0.20
CH	0.00	0.45	0.00	1.29	0.10	0.00	0.00	0.03	0.02	0.02	0.00	7.14	0.00	0.00
CY	0.00	0.03	0.00	0.01	0.00	0.00	0.05	0.01	0.01	0.00	0.00	0.14	0.00	0.00
CZ	0.00	0.38	0.02	0.43	0.28	0.00	0.02	0.94	4.86	0.03	0.00	1.63	0.00	0.01
DE	0.01	2.36	0.07	8.96	5.23	0.00	0.02	0.18	0.59	0.35	0.00	4.21	0.00	0.01
DK	0.00	0.24	0.02	0.38	1.89	0.00	0.00	0.02	0.09	0.12	0.00	0.11	0.00	0.01
EE	2.91	0.10	0.63	0.08	0.22	0.00	0.00	0.05	0.13	0.02	0.00	0.15	0.00	0.02
ES	0.00	268.76	0.01	2.77	0.96	0.00	0.06	0.25	0.19	0.25	0.00	5.33	0.00	0.00
FI	0.68	0.53	19.36	0.30	0.72	0.01	0.02	0.14	0.36	0.08	0.00	0.64	0.00	0.12
FR	0.01	25.03	0.04	90.95	6.61	0.00	0.05	0.38	0.31	0.72	0.01	12.07	0.00	0.01
GB	0.00	2.06	0.03	2.67	140.54	0.00	0.01	0.03	0.07	6.10	0.01	0.39	0.00	0.01
GE	0.00	0.08	0.00	0.02	0.02	15.53	0.03	0.02	0.06	0.00	0.00	0.24	0.00	0.04
GR	0.00	0.59	0.01	0.16	0.10	0.01	29.85	0.33	0.64	0.02	0.00	4.87	0.00	0.02
HR	0.00	0.47	0.01	0.18	0.10	0.00	0.03	47.26	5.37	0.01	0.00	7.73	0.00	0.00
HU	0.00	0.35	0.01	0.18	0.16	0.00	0.05	7.60	91.95	0.02	0.00	2.77	0.00	0.01
IE	0.00	0.43	0.01	0.26	3.59	0.00	0.00	0.01	0.02	28.69	0.01	0.09	0.00	0.00
IS	0.00	0.17	0.03	0.11	0.40	0.00	0.01	0.01	0.03	0.09	0.50	0.10	0.00	0.02
IT	0.00	5.00	0.01	2.37	0.44	0.01	0.24	4.11	1.50	0.08	0.00	386.19	0.00	0.01
KY	0.00	0.09	0.00	0.02	0.01	0.02	0.01	0.01	0.02	0.00	0.00	0.15	13.41	8.89
KZ	0.06	1.54	0.26	0.52	0.98	0.43	0.21	0.32	0.82	0.13	0.01	3.08	7.58	505.91
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
LT	0.06	0.16	0.10	0.12	0.39	0.00	0.01	0.11	0.39	0.04	0.00	0.35	0.00	0.04
LU	0.00	0.03	0.00	0.51	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
LV	0.38	0.16	0.23	0.13	0.39	0.00	0.01	0.10	0.30	0.04	0.00	0.30	0.00	0.03
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.07	0.01	0.03	0.03	0.01	0.02	0.05	0.25	0.00	0.00	0.25	0.00	0.03
ME	0.00	0.11	0.00	0.03	0.02	0.00	0.03	0.18	0.27	0.00	0.00	1.49	0.00	0.00
MK	0.00	0.12	0.00	0.04	0.02	0.00	1.22	0.10	0.31	0.00	0.00	0.83	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
NL	0.00	0.37	0.00	1.67	2.73	0.00	0.00	0.01	0.01	0.09	0.00	0.09	0.00	0.00
NO	0.04	1.13	0.35	0.92	4.05	0.01	0.03	0.09	0.29	0.35	0.01	0.66	0.00	0.08
PL	0.05	0.93	0.15	0.82	1.60	0.01	0.06	1.38	8.01	0.14	0.00	3.08	0.00	0.10
PT	0.00	7.76	0.00	0.19	0.26	0.00	0.00	0.02	0.01	0.07	0.00	0.27	0.00	0.00
RO	0.01	0.76	0.02	0.28	0.24	0.03	0.31	1.48	10.24	0.03	0.00	4.26	0.00	0.15
RS	0.00	0.40	0.01	0.14	0.12	0.01	0.29	3.23	7.28	0.02	0.00	2.96	0.00	0.02
RU	2.07	5.30	6.02	2.40	5.35	1.85	0.75	1.74	4.80	0.66	0.03	10.99	0.78	89.57
SE	0.15	1.26	1.96	1.13	3.70	0.02	0.03	0.15	0.50	0.30	0.01	1.00	0.00	0.11
SI	0.00	0.17	0.00	0.07	0.04	0.00	0.01	6.76	0.88	0.01	0.00	4.15	0.00	0.00
SK	0.00	0.21	0.01	0.13	0.12	0.00	0.03	0.98	16.26	0.01	0.00	1.35	0.00	0.01
TJ	0.00	0.05	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.09	0.38	1.17
TM	0.00	0.24	0.02	0.07	0.09	0.16	0.05	0.05	0.11	0.01	0.00	0.52	0.13	4.80
TR	0.01	1.62	0.04	0.41	0.32	0.82	2.16	0.50	1.10	0.05	0.00	6.02	0.00	0.21
UA	0.04	1.03	0.13	0.50	0.74	0.15	0.29	1.08	7.32	0.09	0.00	4.13	0.02	0.99
UZ	0.00	0.20	0.02	0.06	0.09	0.08	0.03	0.04	0.09	0.01	0.00	0.40	1.90	18.19
SUM	6.6	333.1	29.8	125.7	184.8	21.3	38.1	90.7	174.3	38.8	0.6	499.3	24.2	631.2

Table 3.6. Matrix of PCDD/Fs country-to-country deposition from anthropogenic sources in 2020, g TEQ/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT
AL	0.00	0.00	0.00	0.00	0.00	0.04	0.03	1.23	0.05	0.02	0.00	0.11	0.02
AM	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00
AT	0.02	0.01	0.02	0.00	0.01	0.05	0.00	0.01	0.01	0.15	0.02	1.05	0.05
AZ	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.01	0.00	0.01	0.00	0.06	0.01
BA	0.00	0.01	0.00	0.00	0.01	0.07	0.02	0.04	0.04	0.05	0.01	0.64	0.03
BE	0.00	0.00	0.99	0.00	0.00	0.00	0.00	0.00	0.00	5.33	0.03	0.08	0.04
BG	0.00	0.02	0.00	0.01	0.01	2.22	0.00	0.75	0.03	0.06	0.01	0.70	0.04
BY	0.00	4.86	0.01	0.88	0.00	1.91	0.00	0.02	0.01	0.38	0.11	15.14	0.05
CH	0.10	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.05	0.01	0.04	0.04
CY	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.00	0.00	0.01	0.00
CZ	0.00	0.03	0.03	0.01	0.00	0.06	0.00	0.02	0.01	0.27	0.04	11.50	0.04
DE	0.04	0.07	1.40	0.03	0.02	0.07	0.00	0.01	0.01	19.00	0.30	7.29	0.25
DK	0.00	0.02	0.02	0.01	0.00	0.02	0.00	0.00	0.00	1.52	0.40	0.76	0.04
EE	0.00	0.74	0.00	1.50	0.00	0.06	0.00	0.00	0.00	0.15	0.08	1.51	0.02
ES	0.00	0.01	0.02	0.00	0.04	0.06	0.00	0.03	0.07	0.30	0.05	0.24	15.07
FI	0.00	0.59	0.01	0.56	0.00	0.31	0.00	0.01	0.01	0.41	0.59	3.16	0.10
FR	0.00	0.02	0.74	0.01	1.11	0.09	0.00	0.02	0.06	3.29	0.18	0.60	1.24
GB	0.00	0.02	0.04	0.01	0.00	0.03	0.00	0.00	0.00	3.25	0.35	0.42	0.45
GE	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.01	0.00	0.01	0.00	0.08	0.01
GR	0.00	0.02	0.00	0.01	0.01	0.75	0.00	1.95	0.18	0.05	0.01	0.43	0.05
HR	0.00	0.01	0.00	0.00	0.01	0.06	0.00	0.03	0.03	0.06	0.01	0.78	0.04
HU	0.00	0.04	0.01	0.01	0.01	0.15	0.00	0.06	0.02	0.12	0.02	3.72	0.03
IE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.17	0.05	0.06	0.14
IS	0.00	0.02	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.14	0.15	0.18	0.05
IT	0.01	0.02	0.02	0.01	0.57	0.17	0.01	0.16	0.66	0.21	0.04	0.85	0.26
KY	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.02	0.01
KZ	0.00	0.23	0.02	0.11	0.02	1.27	0.00	0.10	0.04	0.45	0.30	2.45	0.24
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	30.85	0.01	1.23	0.00	0.23	0.00	0.00	0.00	0.28	0.07	7.57	0.02
LU	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.01	0.00
LV	0.00	6.09	0.01	13.20	0.00	0.15	0.00	0.00	0.00	0.28	0.08	3.96	0.03
MC	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.02	0.00	0.01	0.00	47.56	0.00	0.01	0.00	0.02	0.01	0.46	0.01
ME	0.00	0.00	0.00	0.00	0.00	0.02	0.11	0.07	0.02	0.01	0.00	0.09	0.01
MK	0.00	0.00	0.00	0.00	0.00	0.06	0.00	9.87	0.01	0.01	0.00	0.13	0.01
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	43.08	0.06	0.13	0.04
NO	0.00	0.15	0.03	0.08	0.00	0.17	0.00	0.01	0.01	1.80	26.10	1.69	0.23
PL	0.00	1.19	0.06	0.21	0.01	0.72	0.00	0.05	0.02	1.53	0.20	307.50	0.11
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.03	81.67
RO	0.00	0.08	0.01	0.02	0.01	15.21	0.00	0.27	0.04	0.15	0.04	3.09	0.08
RS	0.00	0.02	0.00	0.01	0.01	0.27	0.03	3.44	0.03	0.07	0.01	1.09	0.03
RU	0.00	5.03	0.09	3.17	0.04	8.85	0.00	0.34	0.11	2.83	2.34	24.71	0.93
SE	0.00	0.68	0.06	0.33	0.00	0.31	0.00	0.02	0.01	2.33	4.81	6.60	0.24
SI	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.01	0.02	0.00	0.20	0.01
SK	0.00	0.03	0.01	0.01	0.00	0.09	0.00	0.03	0.01	0.09	0.02	10.53	0.02
TJ	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01
TM	0.00	0.02	0.00	0.01	0.00	0.16	0.00	0.02	0.01	0.04	0.02	0.23	0.04
TR	0.00	0.09	0.01	0.03	0.02	4.55	0.00	0.35	0.23	0.18	0.06	1.53	0.17
UA	0.00	0.58	0.02	0.16	0.01	35.26	0.00	0.13	0.04	0.49	0.17	19.07	0.14
UZ	0.00	0.02	0.00	0.01	0.00	0.13	0.00	0.02	0.01	0.04	0.03	0.23	0.03
SUM	0.2	51.6	4.4	21.7	2.0	121.5	0.2	19.1	1.9	88.9	36.8	440.7	102.1

Table 3.6. Matrix of PCDD/Fs country-to-country deposition from anthropogenic sources in 2020, g TEQ/y (continued)

Receptors ↓ Emitters →

code	RO	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	Sum
AL	0.41	2.61	0.11	0.01	0.03	0.15	0.00	0.00	0.60	0.23	0.00	64.5
AM	0.06	0.01	0.36	0.00	0.00	0.01	0.00	0.02	4.67	0.33	0.01	9.7
AT	0.53	0.39	0.20	0.04	4.09	3.81	0.00	0.00	0.26	0.35	0.00	62.3
AZ	0.18	0.03	4.46	0.01	0.01	0.03	0.01	0.41	3.15	1.16	0.16	17.5
BA	1.13	4.05	0.19	0.02	0.28	1.27	0.00	0.00	0.36	0.35	0.00	64.8
BE	0.01	0.00	0.03	0.02	0.00	0.02	0.00	0.00	0.02	0.04	0.00	42.6
BG	25.00	4.88	1.53	0.03	0.12	0.89	0.00	0.00	8.18	7.23	0.01	140.0
BY	2.57	0.41	14.50	0.38	0.12	1.67	0.01	0.02	2.17	131.18	0.05	216.2
CH	0.02	0.01	0.03	0.01	0.02	0.02	0.00	0.00	0.03	0.04	0.00	23.2
CY	0.07	0.02	0.09	0.00	0.00	0.01	0.00	0.00	10.13	0.21	0.00	11.2
CZ	0.85	0.87	0.29	0.10	0.44	10.96	0.00	0.00	0.52	0.59	0.00	79.0
DE	0.34	0.14	0.67	0.56	0.14	1.03	0.00	0.00	0.38	0.99	0.00	284.6
DK	0.08	0.03	0.18	0.51	0.01	0.10	0.00	0.00	0.10	0.29	0.00	55.8
EE	0.15	0.04	5.00	0.60	0.02	0.18	0.00	0.00	0.19	1.13	0.00	17.3
ES	0.36	0.20	0.28	0.05	0.11	0.17	0.00	0.00	0.49	0.42	0.00	298.6
FI	0.71	0.17	29.83	3.21	0.08	0.45	0.01	0.01	1.19	4.49	0.03	72.8
FR	0.50	0.20	0.51	0.14	0.22	0.36	0.00	0.00	0.52	0.72	0.00	170.6
GB	0.12	0.04	0.32	0.17	0.01	0.09	0.00	0.00	0.17	0.33	0.00	162.8
GE	0.42	0.06	6.29	0.01	0.01	0.04	0.00	0.04	8.88	2.82	0.03	36.0
GR	4.35	1.78	1.07	0.02	0.09	0.44	0.00	0.00	15.67	3.90	0.01	79.5
HR	1.18	3.59	0.19	0.03	4.44	1.63	0.00	0.00	0.25	0.34	0.00	86.0
HU	8.29	7.65	0.43	0.05	1.46	26.57	0.00	0.00	0.55	1.28	0.00	161.8
IE	0.03	0.01	0.13	0.03	0.00	0.02	0.00	0.00	0.04	0.09	0.00	34.4
IS	0.08	0.02	0.42	0.06	0.01	0.04	0.00	0.00	0.39	0.38	0.01	4.1
IT	1.38	1.30	0.64	0.06	2.78	1.07	0.00	0.00	1.21	1.04	0.00	423.9
KY	0.07	0.02	0.48	0.00	0.01	0.02	8.68	0.28	1.01	0.19	34.45	68.1
KZ	3.73	0.57	172.55	0.45	0.17	0.93	6.74	4.22	15.79	33.10	46.68	817.8
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
LT	0.43	0.12	5.52	0.44	0.05	0.54	0.00	0.00	0.48	5.28	0.01	61.2
LU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.2
LV	0.31	0.09	4.10	0.65	0.05	0.40	0.00	0.00	0.39	3.16	0.01	39.0
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
MD	8.94	0.12	0.93	0.02	0.02	0.28	0.00	0.00	1.32	26.09	0.01	87.4
ME	0.25	1.79	0.05	0.00	0.02	0.15	0.00	0.00	0.19	0.09	0.00	10.8
MK	0.60	3.22	0.11	0.01	0.02	0.19	0.00	0.00	0.53	0.29	0.00	23.8
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.1
NL	0.01	0.01	0.05	0.03	0.00	0.02	0.00	0.00	0.02	0.05	0.00	65.5
NO	0.52	0.14	5.12	1.65	0.04	0.34	0.00	0.01	1.16	2.17	0.02	58.4
PL	4.01	1.78	6.55	0.97	0.62	21.93	0.00	0.01	1.75	13.54	0.02	422.4
PT	0.02	0.01	0.03	0.01	0.01	0.01	0.00	0.00	0.04	0.03	0.00	90.8
RO	303.41	10.39	3.24	0.08	0.39	4.52	0.01	0.01	8.40	22.76	0.03	407.0
RS	9.51	82.20	0.48	0.03	0.22	2.59	0.00	0.00	1.04	1.16	0.00	130.9
RU	19.83	2.85	4257.94	4.62	0.82	5.52	2.26	2.57	56.93	314.48	8.24	4897.6
SE	0.92	0.22	6.25	24.45	0.08	0.71	0.01	0.01	1.52	4.62	0.03	93.5
SI	0.26	0.22	0.06	0.01	15.13	0.29	0.00	0.00	0.06	0.10	0.00	31.2
SK	2.60	1.80	0.31	0.04	0.33	70.15	0.00	0.00	0.57	0.98	0.00	114.5
TJ	0.04	0.01	0.27	0.00	0.00	0.01	72.79	0.49	0.70	0.11	22.46	98.8
TM	0.53	0.10	7.11	0.03	0.02	0.11	3.54	69.97	4.37	3.00	31.46	128.1
TR	12.38	1.41	25.95	0.10	0.20	0.96	0.02	0.09	2168.94	50.56	0.11	2294.0
UA	31.15	2.11	71.72	0.40	0.42	8.76	0.05	0.12	20.77	1439.87	0.23	1662.5
UZ	0.41	0.07	6.73	0.04	0.02	0.10	17.50	8.95	2.86	2.98	177.91	239.9
SUM	448.8	137.8	4643.3	40.1	33.2	169.5	111.7	87.3	2348.9	2084.6	322.0	

Table 3.7. Matrix of HCB country-to-country deposition from anthropogenic sources in 2020, kg/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	0.00	0.00	0.01	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.00	5.03	0.00	0.10	0.01	0.00	0.00	0.01	0.00	0.28	0.18	0.00
AZ	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BA	0.00	0.00	0.11	0.00	13.09	0.00	0.00	0.00	0.00	0.00	0.08	0.02	0.00
BE	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.01	0.05	0.00
BG	0.00	0.00	0.05	0.00	0.34	0.00	0.22	0.00	0.00	0.00	0.05	0.02	0.00
BY	0.00	0.00	0.08	0.00	0.13	0.02	0.00	0.38	0.00	0.00	0.21	0.09	0.02
CH	0.00	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.06	0.00	0.01	0.06	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.00	0.00	0.79	0.00	0.12	0.01	0.00	0.00	0.00	0.00	4.57	0.26	0.01
DE	0.00	0.00	0.85	0.00	0.05	0.25	0.00	0.00	0.03	0.00	0.93	4.87	0.07
DK	0.00	0.00	0.01	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.02	0.08	0.27
EE	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.03	0.02	0.01
ES	0.00	0.00	0.03	0.00	0.11	0.02	0.00	0.00	0.00	0.00	0.02	0.03	0.00
FI	0.00	0.00	0.04	0.00	0.04	0.02	0.00	0.01	0.00	0.00	0.08	0.06	0.03
FR	0.00	0.00	0.10	0.00	0.12	0.18	0.00	0.00	0.02	0.00	0.07	0.27	0.01
GB	0.00	0.00	0.01	0.00	0.01	0.05	0.00	0.00	0.00	0.00	0.02	0.05	0.02
GE	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.03	0.00	0.19	0.00	0.03	0.00	0.00	0.00	0.02	0.01	0.00
HR	0.00	0.00	0.20	0.00	1.73	0.00	0.00	0.00	0.00	0.00	0.08	0.02	0.00
HU	0.00	0.00	0.41	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.18	0.03	0.00
IE	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00
IS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IT	0.00	0.00	0.32	0.00	0.76	0.01	0.00	0.00	0.01	0.00	0.07	0.06	0.00
KY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.00	0.07	0.00	0.17	0.02	0.01	0.01	0.00	0.00	0.09	0.06	0.02
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.02	0.00	0.00	0.08	0.05	0.02
LU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
LV	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.02	0.00	0.00	0.08	0.06	0.03
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
ME	0.00	0.00	0.01	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
MK	0.00	0.00	0.01	0.00	0.07	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.01	0.10	0.00
NO	0.00	0.00	0.02	0.00	0.03	0.04	0.00	0.00	0.00	0.00	0.05	0.08	0.07
PL	0.00	0.00	0.40	0.00	0.35	0.05	0.00	0.02	0.00	0.00	3.03	0.49	0.05
PT	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
RO	0.00	0.00	0.15	0.00	0.67	0.01	0.04	0.01	0.00	0.00	0.12	0.04	0.01
RS	0.00	0.00	0.10	0.00	1.39	0.00	0.02	0.00	0.00	0.00	0.08	0.03	0.00
RU	0.00	0.00	0.40	0.00	0.76	0.12	0.03	0.20	0.01	0.00	0.65	0.43	0.15
SE	0.00	0.00	0.06	0.00	0.05	0.07	0.00	0.01	0.00	0.00	0.18	0.24	0.25
SI	0.00	0.00	0.34	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00
SK	0.00	0.00	0.24	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.62	0.04	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
TR	0.00	0.00	0.05	0.00	0.26	0.01	0.03	0.01	0.00	0.00	0.05	0.03	0.00
UA	0.00	0.00	0.17	0.00	0.40	0.02	0.02	0.06	0.00	0.00	0.33	0.10	0.02
UZ	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
SUM	0.01	0.01	10.29	0.01	22.43	1.27	0.45	0.77	0.17	0.00	12.21	8.01	1.11

Table 3.7. Matrix of HCB country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.01	0.01	0.11	0.07	0.00	0.00	0.01	0.04	0.00	0.00	0.08	0.00	0.00
AZ	0.00	0.00	0.00	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BA	0.00	0.01	0.01	0.03	0.03	0.00	0.00	0.04	0.05	0.00	0.00	0.06	0.00	0.00
BE	0.00	0.01	0.00	0.33	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BG	0.00	0.01	0.01	0.03	0.04	0.00	0.02	0.00	0.03	0.00	0.00	0.02	0.00	0.00
BY	0.00	0.01	0.13	0.06	0.18	0.00	0.00	0.00	0.02	0.01	0.00	0.01	0.00	0.00
CH	0.00	0.01	0.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.00	0.01	0.01	0.11	0.09	0.00	0.00	0.00	0.04	0.00	0.00	0.02	0.00	0.00
DE	0.00	0.04	0.05	1.19	1.16	0.00	0.00	0.00	0.01	0.03	0.00	0.05	0.00	0.00
DK	0.00	0.00	0.01	0.05	0.23	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
EE	0.08	0.00	0.51	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ES	0.00	3.67	0.01	0.42	0.21	0.00	0.00	0.00	0.00	0.01	0.00	0.06	0.00	0.00
FI	0.02	0.01	6.04	0.06	0.22	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.00
FR	0.00	0.26	0.03	10.13	1.11	0.00	0.00	0.00	0.01	0.04	0.00	0.13	0.00	0.00
GB	0.00	0.02	0.02	0.23	6.23	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00
GE	0.00	0.00	0.00	0.01	0.01	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.01	0.01	0.02	0.03	0.00	0.13	0.00	0.01	0.00	0.00	0.05	0.00	0.00
HR	0.00	0.01	0.01	0.03	0.03	0.00	0.00	0.13	0.08	0.00	0.00	0.07	0.00	0.00
HU	0.00	0.01	0.01	0.03	0.04	0.00	0.00	0.02	0.70	0.00	0.00	0.02	0.00	0.00
IE	0.00	0.01	0.00	0.04	0.32	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00
IS	0.00	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
IT	0.00	0.07	0.01	0.26	0.10	0.00	0.00	0.02	0.03	0.00	0.00	2.02	0.00	0.00
KY	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01
KZ	0.00	0.03	0.21	0.10	0.26	0.05	0.01	0.00	0.02	0.01	0.00	0.03	0.04	1.35
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	0.00	0.07	0.03	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
LU	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LV	0.01	0.00	0.18	0.04	0.15	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ME	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00	0.00
MK	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.00	0.13	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NO	0.00	0.02	0.20	0.13	0.70	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.00
PL	0.00	0.02	0.10	0.21	0.41	0.00	0.00	0.01	0.10	0.01	0.00	0.03	0.00	0.00
PT	0.00	0.16	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RO	0.00	0.02	0.03	0.06	0.07	0.00	0.01	0.01	0.15	0.00	0.00	0.04	0.00	0.00
RS	0.00	0.01	0.01	0.03	0.04	0.00	0.01	0.01	0.10	0.00	0.00	0.03	0.00	0.00
RU	0.08	0.12	4.29	0.54	1.67	0.27	0.02	0.01	0.09	0.06	0.00	0.11	0.01	1.49
SE	0.01	0.02	1.39	0.20	0.80	0.00	0.00	0.00	0.01	0.02	0.00	0.01	0.00	0.00
SI	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.01	0.00	0.00	0.04	0.00	0.00
SK	0.00	0.00	0.01	0.03	0.04	0.00	0.00	0.00	0.15	0.00	0.00	0.01	0.00	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.01	0.01	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
TR	0.00	0.03	0.04	0.06	0.08	0.09	0.04	0.00	0.02	0.00	0.00	0.05	0.00	0.00
UA	0.00	0.02	0.11	0.10	0.19	0.01	0.01	0.01	0.10	0.01	0.00	0.04	0.00	0.01
UZ	0.00	0.00	0.02	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04
SUM	0.22	4.65	13.56	15.17	15.36	2.23	0.28	0.31	1.83	1.07	0.02	3.15	0.11	2.98

Table 3.7. Matrix of HCB country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT	RO
AL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.01	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.00
AZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BA	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.03	0.00	0.01
BE	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00
BG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.04	0.00	0.11
BY	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.54	0.00	0.01
CH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.19	0.00	0.00
DE	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.01	0.24	0.00	0.00
DK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.02	0.00	0.00
EE	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.05	0.00	0.00
ES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.01	0.23	0.00
FI	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.10	0.00	0.00
FR	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.04	0.02	0.00
GB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01	0.02	0.00	0.00
GE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.02	0.00	0.02
HR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01
HU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.08	0.00	0.03
IE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
IS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.01	0.00	0.03	0.01	0.01
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.01	0.10	0.00	0.02
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	0.08	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.24	0.00	0.00
LU	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LV	0.00	0.04	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.16	0.00	0.00
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02
ME	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00
MK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.01	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.01	0.00	0.00
NO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.43	0.04	0.00	0.00
PL	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.08	0.01	5.80	0.00	0.03
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.00
RO	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.04	0.00	0.01	0.00	0.13	0.00	0.62
RS	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.29	0.00	0.01	0.00	0.05	0.00	0.06
RU	0.00	0.06	0.02	0.08	0.00	0.02	0.00	0.05	0.00	0.17	0.07	0.98	0.02	0.11
SE	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.10	0.11	0.17	0.00	0.01
SI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
SK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.20	0.00	0.01
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
TR	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.01	0.00	0.05	0.00	0.05
UA	0.00	0.01	0.00	0.01	0.00	0.05	0.00	0.02	0.00	0.03	0.01	0.58	0.00	0.10
UZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
SUM	0.00	0.27	0.26	0.36	0.00	0.16	0.05	1.57	0.00	1.59	0.70	10.05	0.76	1.29

Table 3.7. Matrix of HCB country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	SUM
AL	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.35
AM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.21
AT	0.01	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.05	0.00	6.12
AZ	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.31
BA	0.06	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.06	0.00	13.76
BE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84
BG	0.06	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.51	0.00	1.69
BY	0.01	0.03	0.02	0.00	0.04	0.00	0.00	0.00	2.40	0.00	4.51
CH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.53
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.02
CZ	0.01	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.05	0.00	6.44
DE	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.12	0.00	10.50
DK	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.80
EE	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.08	0.00	1.02
ES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	4.93
FI	0.00	0.03	0.14	0.00	0.01	0.00	0.00	0.00	0.29	0.00	7.26
FR	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.09	0.00	12.84
GB	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.04	0.00	7.02
GE	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.22	0.00	1.75
GR	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.25	0.00	1.06
HR	0.03	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.05	0.00	2.57
HU	0.05	0.00	0.00	0.01	0.19	0.00	0.00	0.00	0.10	0.00	2.54
IE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	1.01
IS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.07
IT	0.02	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.12	0.00	4.02
KY	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	0.04	0.21
KZ	0.01	0.19	0.02	0.00	0.02	0.02	0.03	0.02	2.52	0.06	5.62
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.20	0.00	1.08
LU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
LV	0.00	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.21	0.00	1.33
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.65
ME	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.43
MK	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.88
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.92
NO	0.00	0.01	0.08	0.00	0.01	0.00	0.00	0.00	0.15	0.00	2.18
PL	0.03	0.01	0.03	0.01	0.42	0.00	0.00	0.00	0.69	0.00	12.43
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72
RO	0.09	0.01	0.00	0.01	0.06	0.00	0.00	0.01	0.97	0.00	3.41
RS	0.33	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.14	0.00	2.79
RU	0.05	3.25	0.27	0.01	0.12	0.01	0.02	0.05	16.84	0.02	33.73
SE	0.00	0.01	0.78	0.00	0.02	0.00	0.00	0.00	0.35	0.00	4.92
SI	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.02	0.00	0.67
SK	0.02	0.00	0.00	0.00	0.86	0.00	0.00	0.00	0.11	0.00	2.61
TJ	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.02	0.02	0.20
TM	0.00	0.01	0.00	0.00	0.00	0.01	0.18	0.00	0.25	0.03	0.68
TR	0.02	0.03	0.01	0.00	0.01	0.00	0.00	0.93	2.57	0.00	4.59
UA	0.03	0.08	0.02	0.01	0.13	0.00	0.00	0.02	24.55	0.00	27.34
UZ	0.00	0.01	0.00	0.00	0.00	0.03	0.03	0.00	0.23	0.14	0.62
SUM	0.90	3.71	1.49	0.24	2.19	0.23	0.27	1.09	55.08	0.30	

Table 3.8. Matrix of PCB-153 country-to-country deposition from anthropogenic sources in 2020, kg/y

Receptors ↓ Emitters →

code	AL	AM	AT	AZ	BA	BE	BG	BY	CH	CY	CZ	DE	DK
AL	0.15	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	0.00
AM	0.00	0.56	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.00	0.00	6.61	0.00	0.00	0.09	0.00	0.00	0.36	0.00	0.30	3.12	0.01
AZ	0.00	0.13	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
BA	0.00	0.00	0.06	0.00	0.34	0.02	0.00	0.00	0.02	0.00	0.07	0.15	0.00
BE	0.00	0.00	0.00	0.00	0.00	16.13	0.00	0.00	0.02	0.00	0.01	1.26	0.00
BG	0.00	0.00	0.03	0.00	0.01	0.02	1.23	0.01	0.01	0.00	0.04	0.12	0.00
BY	0.00	0.00	0.06	0.00	0.00	0.09	0.01	5.49	0.03	0.00	0.16	0.68	0.03
CH	0.00	0.00	0.03	0.00	0.00	0.05	0.00	0.00	4.71	0.00	0.01	1.01	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00
CZ	0.00	0.00	0.52	0.00	0.00	0.13	0.00	0.01	0.09	0.00	6.66	3.79	0.01
DE	0.00	0.00	0.68	0.00	0.00	4.39	0.00	0.01	1.55	0.00	1.31	93.09	0.15
DK	0.00	0.00	0.01	0.00	0.00	0.20	0.00	0.00	0.01	0.00	0.02	1.00	1.15
EE	0.00	0.00	0.01	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.02	0.18	0.01
ES	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.00	0.04	0.00	0.01	0.30	0.00
FI	0.00	0.00	0.03	0.00	0.00	0.11	0.00	0.04	0.02	0.00	0.07	0.49	0.03
FR	0.00	0.00	0.08	0.00	0.00	5.55	0.00	0.00	2.32	0.00	0.06	5.81	0.02
GB	0.00	0.00	0.01	0.00	0.00	0.64	0.00	0.00	0.02	0.00	0.02	0.72	0.03
GE	0.00	0.15	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
GR	0.02	0.00	0.02	0.00	0.00	0.01	0.08	0.01	0.01	0.00	0.02	0.07	0.00
HR	0.00	0.00	0.14	0.00	0.10	0.02	0.00	0.00	0.02	0.00	0.09	0.21	0.00
HU	0.00	0.00	0.24	0.00	0.01	0.04	0.01	0.01	0.03	0.00	0.27	0.42	0.00
IE	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.10	0.00
IS	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00
IT	0.01	0.00	0.21	0.00	0.02	0.09	0.01	0.00	0.57	0.00	0.08	0.80	0.00
KY	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
KZ	0.00	0.07	0.04	0.04	0.00	0.07	0.01	0.06	0.03	0.00	0.06	0.33	0.01
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00
LT	0.00	0.00	0.02	0.00	0.00	0.05	0.00	0.48	0.01	0.00	0.06	0.38	0.04
LU	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.01	0.00	0.00	0.36	0.00
LV	0.00	0.00	0.02	0.00	0.00	0.06	0.00	0.17	0.01	0.00	0.05	0.35	0.04
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.04	0.00
ME	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00
MK	0.02	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.02	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.00	0.00	0.00	2.86	0.00	0.00	0.01	0.00	0.01	2.29	0.01
NO	0.00	0.00	0.02	0.00	0.00	0.38	0.00	0.01	0.03	0.00	0.04	0.87	0.11
PL	0.00	0.00	0.29	0.00	0.01	0.41	0.01	0.35	0.10	0.00	3.83	5.99	0.09
PT	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.04	0.00
RO	0.00	0.00	0.11	0.00	0.01	0.05	0.09	0.04	0.04	0.00	0.13	0.38	0.00
RS	0.01	0.00	0.06	0.00	0.03	0.02	0.09	0.01	0.02	0.00	0.08	0.18	0.00
RU	0.01	0.16	0.33	0.09	0.02	0.64	0.09	1.38	0.22	0.00	0.53	3.05	0.14
SE	0.00	0.00	0.05	0.00	0.00	0.47	0.00	0.04	0.05	0.00	0.12	2.03	0.63
SI	0.00	0.00	0.28	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.03	0.13	0.00
SK	0.00	0.00	0.13	0.00	0.00	0.03	0.00	0.01	0.02	0.00	0.87	0.36	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
TR	0.01	0.22	0.04	0.02	0.01	0.03	0.08	0.03	0.03	0.02	0.04	0.19	0.00
UA	0.00	0.01	0.15	0.00	0.01	0.12	0.05	0.55	0.06	0.00	0.34	0.95	0.02
UZ	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.00
SUM	0.27	1.37	10.37	0.52	0.60	33.27	1.82	8.81	10.56	0.08	15.47	131.44	2.58

Table 3.8. Matrix of PCB-153 country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	EE	ES	FI	FR	GB	GE	GR	HR	HU	IE	IS	IT	KY	KZ
AL	0.00	0.06	0.00	0.06	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.30	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
AT	0.00	0.25	0.00	0.93	0.06	0.00	0.00	0.02	0.06	0.00	0.00	1.86	0.00	0.00
AZ	0.00	0.01	0.00	0.01	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
BA	0.00	0.15	0.00	0.21	0.02	0.00	0.00	0.08	0.06	0.00	0.00	0.88	0.00	0.00
BE	0.00	0.15	0.00	7.98	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
BG	0.00	0.11	0.00	0.15	0.02	0.00	0.05	0.01	0.04	0.00	0.00	0.39	0.00	0.00
BY	0.01	0.12	0.01	0.37	0.15	0.00	0.00	0.00	0.03	0.00	0.00	0.29	0.00	0.00
CH	0.00	0.20	0.00	1.69	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
CZ	0.00	0.15	0.00	0.78	0.09	0.00	0.00	0.01	0.10	0.00	0.00	0.35	0.00	0.00
DE	0.00	0.88	0.01	12.89	1.60	0.00	0.00	0.00	0.02	0.03	0.00	1.06	0.00	0.00
DK	0.00	0.08	0.00	0.52	0.46	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00
EE	0.65	0.03	0.04	0.10	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
ES	0.00	61.26	0.00	3.28	0.26	0.00	0.00	0.00	0.00	0.01	0.00	0.88	0.00	0.00
FI	0.12	0.16	3.74	0.41	0.25	0.00	0.00	0.00	0.01	0.01	0.00	0.14	0.00	0.00
FR	0.00	9.09	0.00	127.70	1.76	0.00	0.00	0.01	0.01	0.04	0.00	2.96	0.00	0.00
GB	0.00	0.52	0.00	2.74	30.87	0.00	0.00	0.00	0.00	0.38	0.00	0.09	0.00	0.00
GE	0.00	0.01	0.00	0.02	0.00	1.41	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
GR	0.00	0.15	0.00	0.18	0.02	0.00	0.98	0.00	0.02	0.00	0.00	0.74	0.00	0.00
HR	0.00	0.17	0.00	0.27	0.02	0.00	0.00	0.45	0.09	0.00	0.00	1.28	0.00	0.00
HU	0.00	0.14	0.00	0.31	0.04	0.00	0.00	0.06	1.92	0.00	0.00	0.60	0.00	0.00
IE	0.00	0.12	0.00	0.29	0.62	0.00	0.00	0.00	0.00	1.03	0.00	0.02	0.00	0.00
IS	0.00	0.03	0.00	0.08	0.06	0.00	0.00	0.00	0.00	0.00	0.12	0.01	0.00	0.00
IT	0.00	1.55	0.00	3.22	0.09	0.00	0.01	0.06	0.04	0.00	0.00	50.95	0.00	0.00
KY	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	1.06	0.24
KZ	0.00	0.22	0.02	0.39	0.17	0.07	0.01	0.00	0.02	0.00	0.00	0.45	0.45	5.65
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
LT	0.01	0.05	0.01	0.18	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.09	0.00	0.00
LU	0.00	0.01	0.00	1.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LV	0.08	0.05	0.02	0.18	0.12	0.00	0.00	0.00	0.01	0.00	0.00	0.07	0.00	0.00
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.02	0.00	0.04	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.00	0.00
ME	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.20	0.00	0.00
MK	0.00	0.04	0.00	0.04	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.15	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.12	0.00	2.44	0.63	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00
NO	0.00	0.30	0.17	1.18	0.97	0.00	0.00	0.00	0.01	0.02	0.00	0.11	0.00	0.00
PL	0.01	0.34	0.01	1.44	0.50	0.00	0.01	0.02	0.15	0.01	0.00	0.70	0.00	0.00
PT	0.00	1.37	0.00	0.20	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
RO	0.00	0.21	0.00	0.38	0.05	0.01	0.02	0.02	0.19	0.00	0.00	0.90	0.00	0.00
RS	0.00	0.13	0.00	0.20	0.02	0.00	0.01	0.03	0.17	0.00	0.00	0.57	0.00	0.00
RU	0.20	1.28	0.40	2.80	1.35	0.28	0.06	0.03	0.13	0.03	0.01	2.49	0.08	1.72
SE	0.02	0.35	0.28	1.42	1.02	0.00	0.00	0.00	0.01	0.02	0.00	0.21	0.00	0.00
SI	0.00	0.08	0.00	0.15	0.01	0.00	0.00	0.08	0.02	0.00	0.00	1.20	0.00	0.00
SK	0.00	0.07	0.00	0.21	0.03	0.00	0.00	0.01	0.33	0.00	0.00	0.28	0.00	0.00
TJ	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.06	0.03
TM	0.00	0.03	0.00	0.04	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.09
TR	0.00	0.32	0.00	0.38	0.04	0.11	0.11	0.01	0.02	0.00	0.00	1.10	0.00	0.00
UA	0.00	0.30	0.01	0.68	0.17	0.03	0.03	0.02	0.14	0.00	0.00	1.01	0.00	0.02
UZ	0.00	0.03	0.00	0.04	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.19	0.35
SUM	1.13	80.79	4.74	177.71	42.12	2.11	1.35	0.92	3.63	1.64	0.14	74.59	1.85	8.13

Table 3.8. Matrix of PCB-153 country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	LI	LT	LU	LV	MC	MD	ME	MK	MT	NL	NO	PL	PT
AL	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00
AM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AT	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.00
AZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BA	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00	0.03	0.00
BE	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	1.01	0.00	0.00	0.00
BG	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.01	0.00	0.03	0.00
BY	0.00	0.24	0.00	0.06	0.00	0.03	0.00	0.00	0.00	0.04	0.00	0.45	0.00
CH	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CZ	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.43	0.00
DE	0.01	0.01	0.24	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.01	0.39	0.01
DK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.01	0.02	0.00
EE	0.00	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.04	0.00
ES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.01	0.34
FI	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.09	0.00
FR	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.01	0.02	0.04
GB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.01	0.02	0.01
GE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GR	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.00	0.00	0.01	0.00
HR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00
HU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.11	0.00
IE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00
IS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
IT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.03	0.01
KY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KZ	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.03	0.01	0.06	0.00
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	1.33	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.21	0.00
LU	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
LV	0.00	0.22	0.00	0.98	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.10	0.00
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.02	0.00
ME	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00
MK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NL	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	5.55	0.00	0.01	0.00
NO	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	1.00	0.04	0.01
PL	0.00	0.11	0.01	0.02	0.00	0.01	0.00	0.00	0.00	0.21	0.01	9.30	0.00
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	2.07
RO	0.00	0.01	0.00	0.00	0.00	0.23	0.00	0.01	0.00	0.02	0.00	0.12	0.00
RS	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.07	0.00	0.01	0.00	0.04	0.00
RU	0.00	0.23	0.01	0.20	0.00	0.13	0.00	0.01	0.00	0.31	0.06	0.75	0.02
SE	0.00	0.03	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.27	0.12	0.18	0.01
SI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
SK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.32	0.00
TJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TR	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.04	0.00
UA	0.00	0.04	0.00	0.01	0.00	0.35	0.00	0.01	0.00	0.05	0.00	0.62	0.00
UZ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
SUM	0.06	2.31	0.69	1.54	0.01	1.35	0.14	0.36	0.03	11.44	1.27	13.60	2.56

Table 3.8. Matrix of PCB-153 country-to-country deposition from anthropogenic sources in 2020, kg/y (continued)

Receptors ↓ Emitters →

code	RO	RS	RU	SE	SI	SK	TJ	TM	TR	UA	UZ	SUM
AL	0.00	0.05	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.76
AM	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.00	0.74
AT	0.01	0.01	0.01	0.01	0.25	0.28	0.00	0.00	0.00	0.03	0.00	14.36
AZ	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.00	0.79
BA	0.01	0.06	0.01	0.00	0.00	0.05	0.00	0.00	0.00	0.02	0.00	2.29
BE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.00
BG	0.35	0.15	0.07	0.00	0.00	0.04	0.00	0.00	0.05	0.28	0.00	3.28
BY	0.04	0.01	0.54	0.04	0.00	0.06	0.00	0.00	0.01	1.10	0.00	10.18
CH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.61
CY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.10
CZ	0.01	0.01	0.02	0.01	0.01	0.45	0.00	0.00	0.00	0.04	0.00	13.71
DE	0.01	0.00	0.04	0.07	0.01	0.06	0.00	0.00	0.00	0.06	0.00	120.79
DK	0.00	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.01	0.00	3.77
EE	0.00	0.00	0.09	0.06	0.00	0.01	0.00	0.00	0.00	0.02	0.00	1.60
ES	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	66.73
FI	0.01	0.00	0.44	0.27	0.00	0.02	0.00	0.00	0.00	0.08	0.00	6.70
FR	0.01	0.00	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.02	0.00	156.36
GB	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	36.47
GE	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	2.15
GR	0.05	0.04	0.04	0.00	0.00	0.02	0.00	0.00	0.07	0.12	0.00	2.76
HR	0.01	0.04	0.01	0.00	0.06	0.07	0.00	0.00	0.00	0.02	0.00	3.11
HU	0.04	0.10	0.02	0.00	0.01	0.76	0.00	0.00	0.00	0.20	0.00	5.39
IE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.29
IS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
IT	0.02	0.02	0.03	0.00	0.06	0.05	0.00	0.00	0.01	0.04	0.00	58.06
KY	0.00	0.00	0.03	0.00	0.00	0.00	0.14	0.01	0.01	0.01	0.54	2.15
KZ	0.05	0.01	4.52	0.03	0.00	0.03	0.11	0.16	0.08	0.62	0.83	14.75
LI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
LT	0.01	0.00	0.24	0.05	0.00	0.02	0.00	0.00	0.00	0.09	0.00	3.58
LU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72
LV	0.00	0.00	0.12	0.06	0.00	0.01	0.00	0.00	0.00	0.06	0.00	2.83
MC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MD	0.12	0.00	0.04	0.00	0.00	0.01	0.00	0.00	0.01	0.47	0.00	1.35
ME	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.48
MK	0.01	0.11	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.68
MT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
NL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.99
NO	0.00	0.00	0.06	0.21	0.00	0.01	0.00	0.00	0.00	0.04	0.00	5.85
PL	0.04	0.03	0.39	0.10	0.01	0.74	0.00	0.00	0.01	0.78	0.00	26.05
PT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.81
RO	2.63	0.18	0.14	0.01	0.01	0.15	0.00	0.00	0.05	1.51	0.00	7.69
RS	0.08	1.06	0.02	0.00	0.00	0.09	0.00	0.00	0.00	0.07	0.00	3.14
RU	0.31	0.07	104.39	0.39	0.02	0.22	0.03	0.11	0.35	6.15	0.22	131.52
SE	0.01	0.00	0.14	5.58	0.00	0.02	0.00	0.00	0.01	0.10	0.00	13.24
SI	0.00	0.00	0.00	0.00	0.30	0.02	0.00	0.00	0.00	0.01	0.00	2.34
SK	0.02	0.02	0.02	0.00	0.01	2.72	0.00	0.00	0.00	0.19	0.00	5.69
TJ	0.00	0.00	0.01	0.00	0.00	0.00	0.61	0.02	0.00	0.00	0.27	1.05
TM	0.00	0.00	0.24	0.00	0.00	0.00	0.03	1.06	0.02	0.05	0.56	2.33
TR	0.14	0.03	0.66	0.01	0.00	0.03	0.00	0.00	4.66	0.98	0.00	9.45
UA	0.41	0.04	2.21	0.03	0.01	0.24	0.00	0.01	0.13	22.33	0.01	31.19
UZ	0.00	0.00	0.23	0.00	0.00	0.00	0.19	0.20	0.01	0.05	2.44	3.90
SUM	4.42	2.12	115.35	7.09	0.79	6.20	1.12	1.58	5.64	35.69	4.88	

4. EVALUATION OF MODELLING RESULTS VS. OBSERVATIONS

Verification of modelled concentrations was carried out via comparison with measurements of the EMEP monitoring network. Some of the EMEP stations were not taken into account in the analysis due to specific meteorological conditions not captured well by the model (high-altitude stations DE0003R, ES0007R, and HR0002R) and potential influence of emission sources not taken into account in model simulations (remote station NO0042R). Overall statistics of the comparison are summarized in Table 4.1. Modelled and measured annual mean air concentrations of selected POPs, namely, B(a)P, B(b)F, B(k)F, I(cd)P, PCB-153, HCB, PCDD/Fs, are summarized in Tables 4.2 – 4.8 for each station. Time series of modelled and observed monthly mean concentrations are demonstrated in Fig. 4.1 - 4.12.

Model estimates of B(a)P and I(cd)P air concentrations for 2020 were compared with measurements of 31 and 29 EMEP monitoring stations, respectively. Mean relative bias of modelled B(a)P concentrations in comparison to measurement data is -3.5%, and spatial correlation coefficient is 0.87. For 21 station the difference between the modelled and observed concentrations does not exceed a factor of 2, and for 28 ones a factor of 3. Comparison of I(cd)P modelled and measured values showed quite similar bias -5.3% and spatial correlation 0.81. Differences between the modelled and observed I(cd)P concentrations do not exceed a factor of 2 for 24 stations, and a factor of 3 for all the stations.

Model performance for B(b)F and B(k)F was analyzed using the measurements of 18 and 22 EMEP stations. For the whole set of the stations the model demonstrates some overestimation of observed B(b)F and B(k)F air concentrations. In particular, mean relative bias for B(b)F is 23% and for B(k)F is 5%. The spatial correlation coefficient for B(b)F and B(k)F is estimated to 0.94 and 0.86, respectively. For 14 stations the difference between the modelled and observed B(b)F concentrations does not exceed a factor of 2, and for 16 ones a factor of 3. Differences between the modelled and observed B(k)F concentrations do not exceed a factor of 2 for 12 stations, and a factor of 3 for 19 stations.

Comparison of modelled HCB air concentrations for 2020 was carried out for the measurements of 8 EMEP monitoring stations. Mean relative bias of HCB modelling results comparing to measurements is about -3%, and spatial correlation is 0.3. Discrepancies between the modelled and observed HCB concentrations do not exceed a factor of 3 for 5 stations, and a factor of 2 for 4 stations. Model estimates tend to underpredict HCB concentrations observed at CZ0003R, NO0002R, NO0042R, and NO0090R. At the same time, measurements of FI0036R, IS0091R, SE0014R, and SE0022R were overpredicted. The highest differences, more than a factor of 3, were found for IS0091R and SE0014R stations.

Model performance for PCB-153 was tested using measurements of air concentrations of 8 EMEP monitoring stations for 2020. Mean relative bias of PCB-153 modelling results comparing to measurements is about 3%, and spatial correlation is 0.75. Differences between the modelled and observed HCB concentrations do not exceed a factor of 2 for 4 stations, and a factor of 3 for 7 stations. Model estimates tend to underpredict PCB-153 concentrations observed at IS0091R,

NO0002R, NO0042R, NO0090R, SE0014R, and SE0022R. At the same time, measurements of FI0036R and CZ0003R were overpredicted. The highest difference, more than a factor of 3, was found for NO0090R station.

Modelled air concentrations of PCDD/Fs for 2020 were compared with measurements of two EMEP stations in Sweden, namely, SE0014R and SE0022R. Monitoring of PCDD/F at these stations was carried out for several months of the year, namely, for April, June, September, and December. Mean relative bias of modelling results for the data of two stations is about -30%. For the particular stations, good agreement was found for SE0014R, whereas for SE0022R differences were higher than a factor of 2.

Table 4.1. Statistical indices of comparison of modelled and observed mean annual concentrations in air in 2019 (*N* – number of stations, *MRB* – mean relative bias, *R* – spatial correlation coefficient, *F2* – number of stations, for which the difference between the modelled and measured values is within a factor of 2).

Pollutant	N	MRB, %	R	F2, %
B(a)P	31	-3.5	0.87	70
B(b)F	18	23.4	0.94	78
B(k)F	22	5.2	0.86	55
IcdP	29	-5.3	0.81	83
HCB	8	-2.9	0.32	50
PCB-153	8	3.1	0.75	50
PCDD/Fs	2	-29.5		50

4.1. Polycyclic aromatic hydrocarbons (PAHs)

4.1.1. Benzo(a)pyrene (B(a)P)

Table 4.2. Annual mean modelled and observed B(a)P air concentrations, ng/m³, temporal correlation coefficient (Rc and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	Alt	Longitude	Latitude	Observed	Modelled	Bias
Houtem	BE0013R	pm10	2	2.58	51.02	0.051	0.078	52.5
Koštica (NOAK)	CZ0003R	air+pm10	535	15.08	49.57	0.252	0.512	102.7
Westerland	DE0001R	air+pm10	12	8.31	54.93	0.021	0.056	167.0
Waldhof	DE0002R	air+pm10	74	10.76	52.80	0.121	0.118	-2.9
Schmücke	DE0008R	air+pm10	937	10.77	50.65	0.085	0.136	60.7
Zingst	DE0009R	air+pm10	1	12.73	54.44	0.126	0.093	-26.1
Lahemaa	EE0009R	pm10	32	25.90	59.50	0.081	0.051	-36.8
San Pablo de los Montes	ES0001R	pm10	917	-4.35	39.55	0.024	0.010	-57.4
Niembro	ES0008R	pm10	134	-4.85	43.44	0.025	0.029	15.5
Zarra	ES0012R	pm10	885	-1.10	39.08	0.007	0.006	-14.5
Els Torms	ES0014R	pm10	470	0.74	41.39	0.022	0.015	-31.9
Pallas (Matorova)	FI0036R	air+aerosol	340	24.24	68.00	0.004	0.005	38.0
Hyytiälä	FI0050R	pm10	181	24.28	61.85	0.068	0.045	-33.3
Donon	FR0008R	pm10	775	7.13	48.50	0.028	0.069	147.1
Revin	FR0009R	pm10	390	4.63	49.90	0.048	0.065	33.7
Peyrusse Vieille	FR0013R	pm10	200	0.18	43.62	0.029	0.019	-33.7
Saint-Nazaire-le-Désert	FR0023R	pm10	605	5.28	44.57	0.057	0.017	-71.2
Vemeuil	FR0025R	pm10	182	2.61	46.82	0.049	0.029	-41.2
Kergoff	FR0028R	pm10	307	-2.94	48.26	0.019	0.016	-18.5
High Muffles	GB0014R	aerosol	267	-0.81	54.33	0.028	0.025	-12.9
Auchencorth Moss	GB0048R	pm10	260	-3.24	55.79	0.009	0.014	49.8
Chilbolton Observatory	GB1055R	pm10	78	-1.44	51.15	0.055	0.069	24.3
Rucava	LV0010R	pm10	18	21.17	56.16	0.214	0.095	-55.5
Birkenes II	NO0002R	air+aerosol	219	8.25	58.39	0.009	0.018	100.9
Diabla Gora	PL0005R	pm10	157	22.07	54.15	0.507	0.306	-39.6
Zielonka	PL0009R	pm10	121	17.93	53.66	0.632	0.492	-22.2
Ráó	SE0014R	air+aerosol	5	11.91	57.39	0.011	0.026	148.7
Hallahus	SE0020R	air+aerosol	190	13.15	56.04	0.014	0.052	279.3
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	0.014	0.023	65.3
Iskrba	SI0008R	pm10	520	14.87	45.57	0.182	0.210	15.0

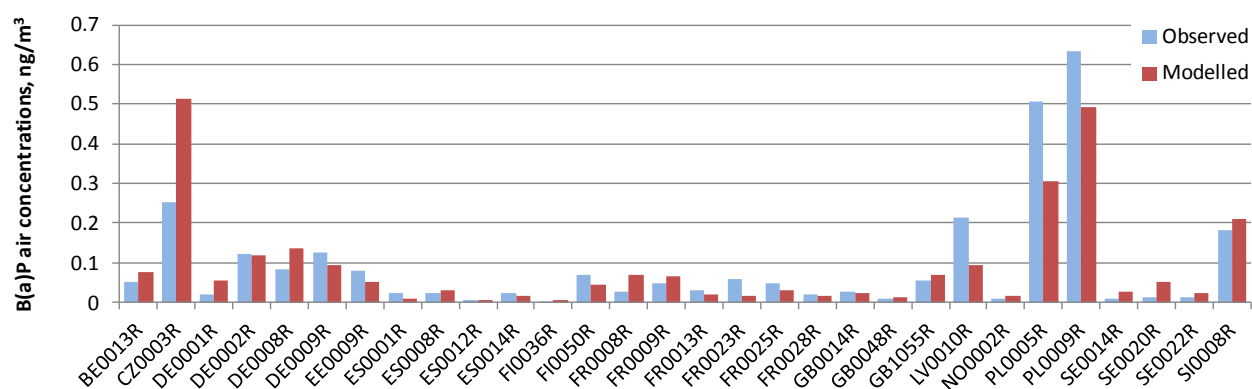
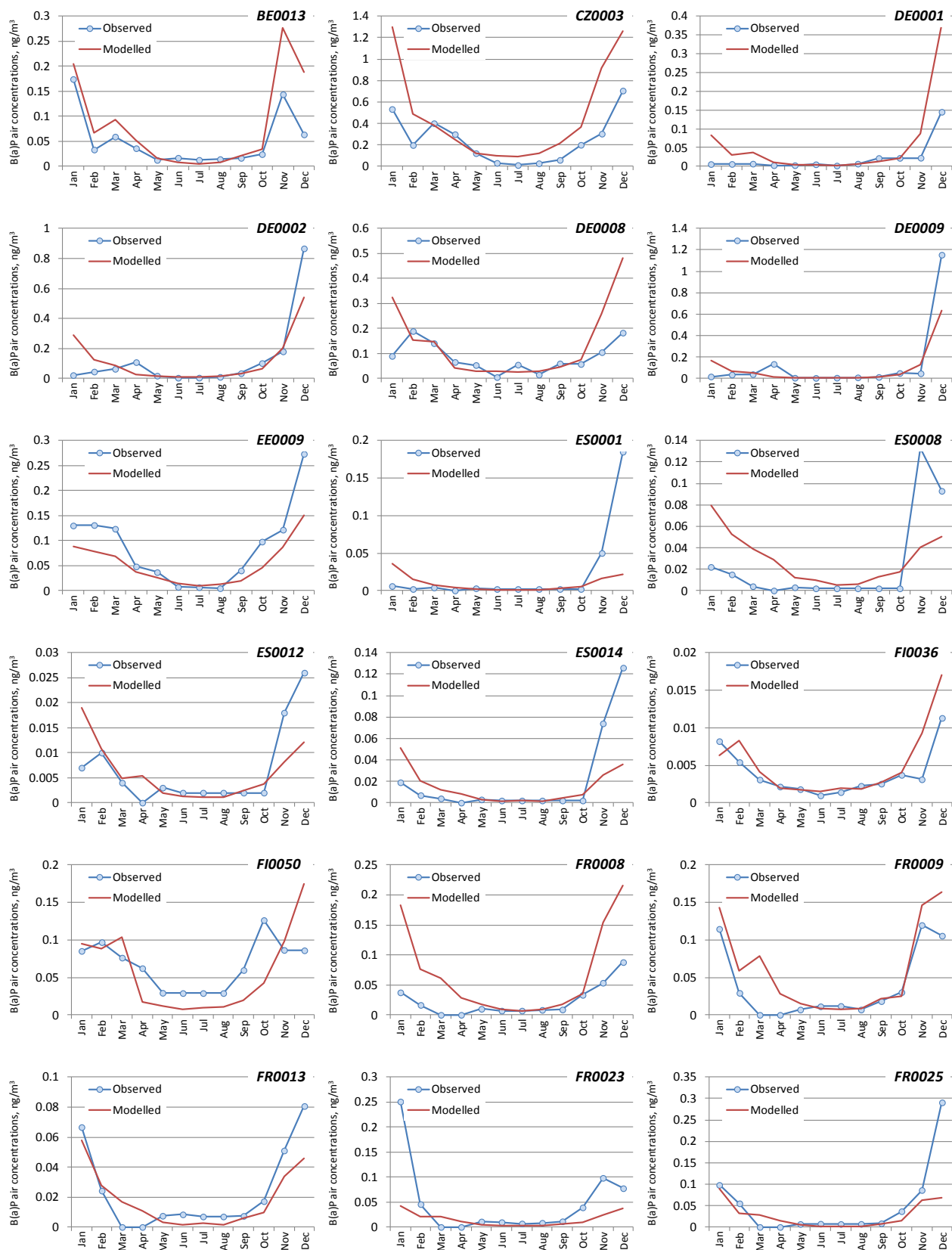


Fig. 4.1. Modelled and observed annual mean concentrations of B(a)P in air at the EMEP stations in 2020.



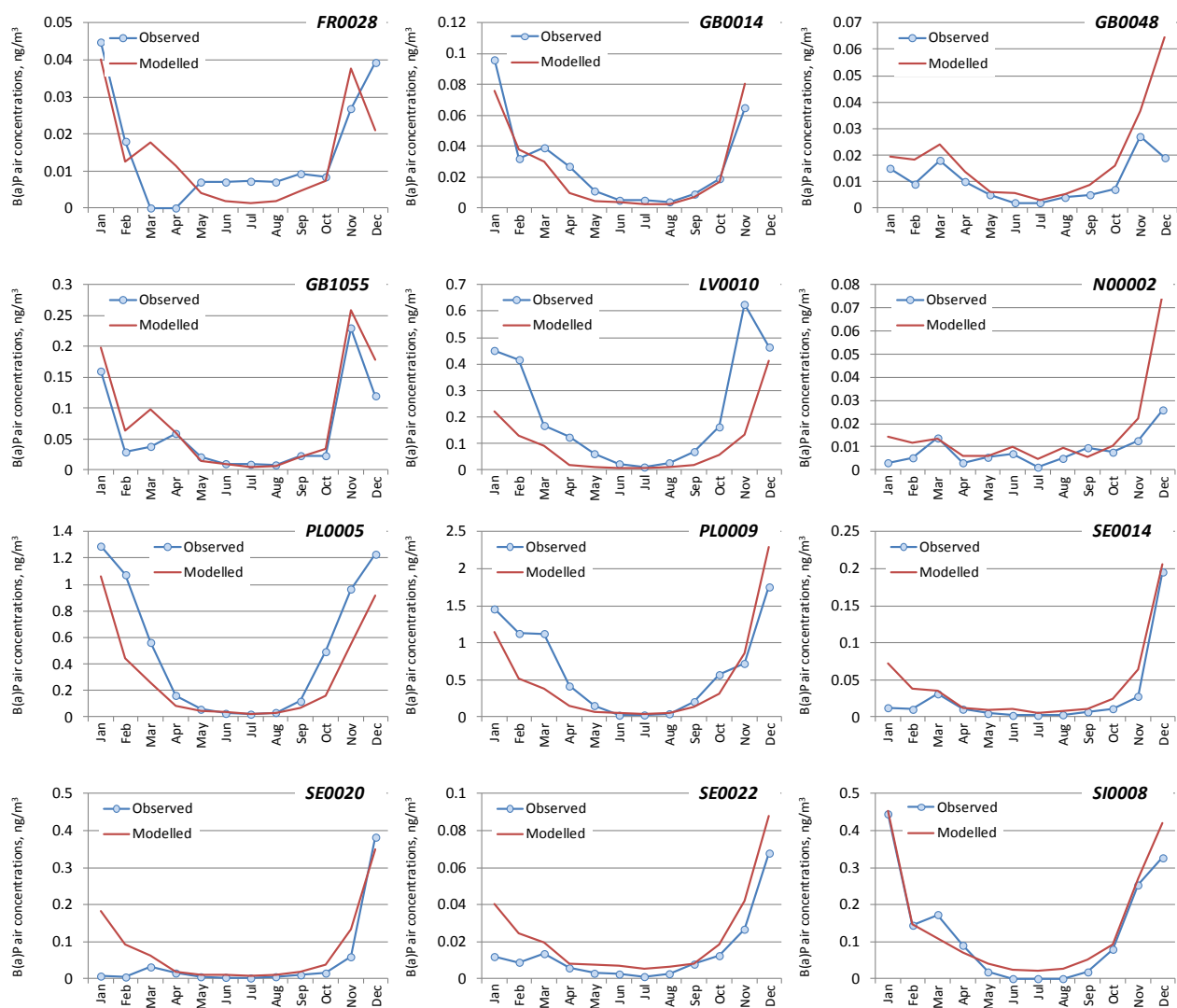


Fig. 4.2. Modelled and observed monthly mean concentrations of B(a)P in air at the EMEP stations in 2020.

4.1.2. Benzo(b)fluoranthene (B(b)F)

Table 4.3. Annual mean modelled and observed B(b)F air concentrations, ng/m³, temporal correlation coefficient (Rc and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	Alt	Longitude	Latitude	Observed	Modelled	Bias
Kosetice (NOAK)	CZ0003R	air+pm10	535	15.08	49.57	0.307	0.514	67.6
Pallas (Matorova)	FI0036R	air+aerosol	340	24.24	68.00	0.144	0.170	18.1
Donon	FR0008R	pm10	775	7.13	48.50	0.228	0.365	59.8
Revin	FR0009R	pm10	390	4.63	49.90	0.084	0.134	59.4
Peyrusse Vieille	FR0013R	pm10	200	0.18	43.62	0.054	0.054	0.1
Saint-Nazaire-le-Désert	FR0023R	pm10	605	5.28	44.57	0.078	0.038	-51.2
Vernueil	FR0025R	pm10	182	2.61	46.82	0.075	0.068	-9.1
Kergoff	FR0028R	pm10	307	-2.94	48.26	0.053	0.043	-18.3
High Muffles	GB0014R	aerosol	267	-0.81	54.33	0.055	0.043	-21.9
Auchencorth Moss	GB0048R	pm10	260	-3.24	55.79	0.036	0.038	6.4
Chilbolton Observatory	GB1055R	pm10	78	-1.44	51.15	0.071	0.087	22.4
Rucava	LV0010R	pm10	18	21.17	56.16	0.270	0.215	-20.3
Birkenes II	NO0002R	air+aerosol	219	8.25	58.39	0.054	0.064	19.8
Diabla Gora	PL0005R	pm10	157	22.07	54.15	0.644	0.584	-9.3
Zielonka	PL0009R	pm10	121	17.93	53.66	0.667	0.838	25.6
Rãdău	SE0014R	air+aerosol	5	11.91	57.39	0.077	0.239	211.0
Hallahus	SE0020R	air+aerosol	190	13.15	56.04	0.028	0.085	203.0
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	0.026	0.056	116.4

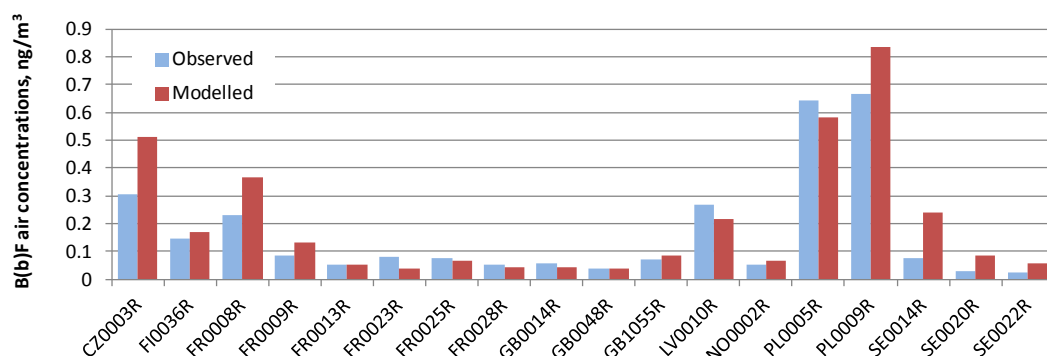


Fig. 4.3. Modelled and observed annual mean concentrations of B(b)F in air at the EMEP stations in 2020.

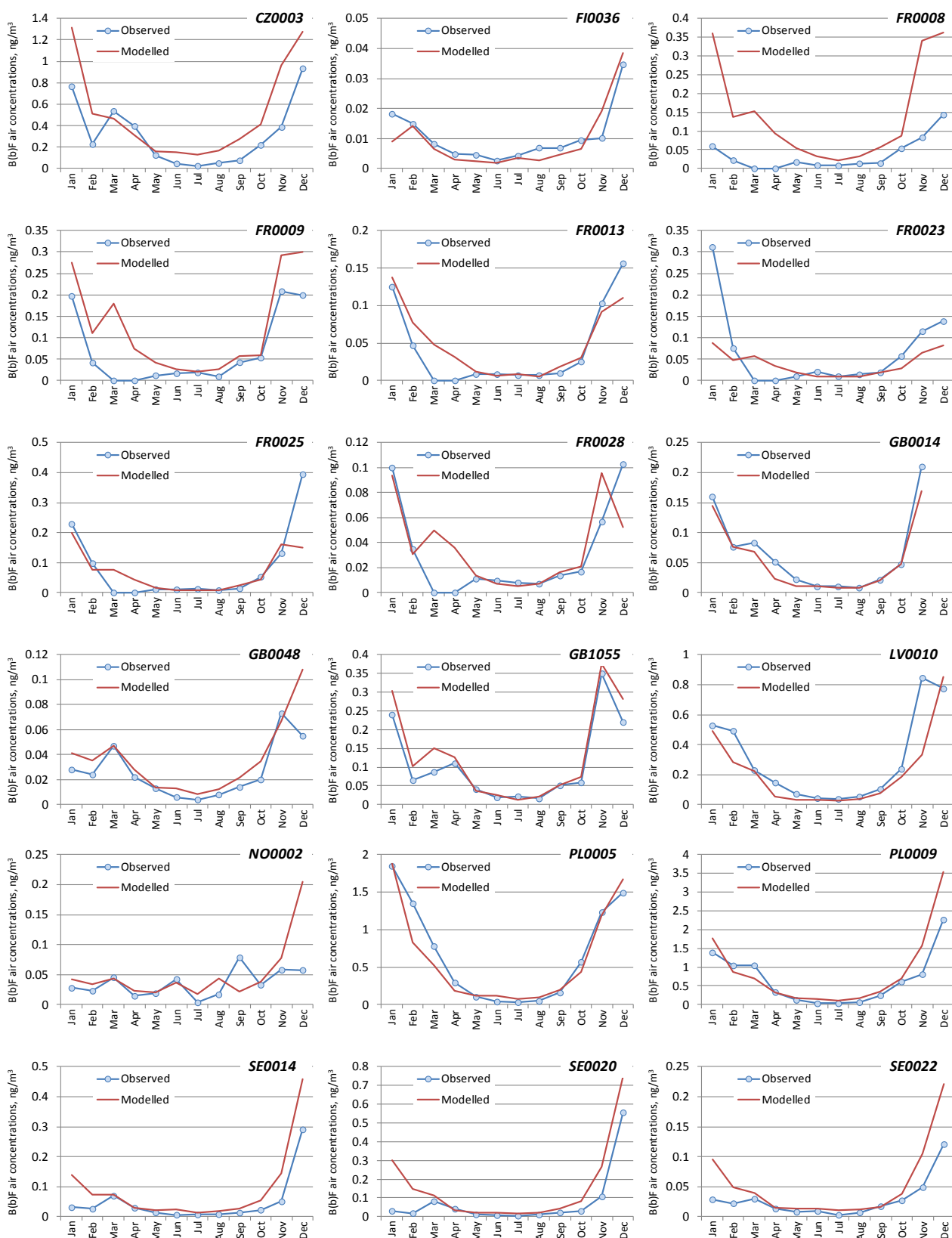


Fig. 4.4. Modelled and observed monthly mean concentrations of B(b)F in air at the EMEP stations in 2020.

4.1.3. Benzo(k)fluoranthene (B(k)F)

Table 4.4. Annual mean modelled and observed B(k)F air concentrations, ng/m³, temporal correlation coefficient (Rc and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	R	Longitude	Latitude	Observed	Modelled	Bias
Kosetice (NOAK)	CZ0003R	air+pm10	535	15.08	49.57	0.124	0.280	125.4
San Pablo de los Montes	ES0001R	pm10	917	-4.35	39.55	0.077	0.110	42.2
Niembro	ES0008R	pm10	134	-4.85	43.44	0.046	0.014	-69.7
Zarra	ES0012R	pm10	885	-1.10	39.08	0.011	0.005	-55.9
Els Torms	ES0014R	pm10	470	0.74	41.39	0.012	0.008	-35.3
Pallas (Matorova)	FI0036R	air+aerosol	340	24.24	68.00	0.012	0.005	-60.4
Donon	FR0008R	pm10	775	7.13	48.50	0.017	0.059	244.3
Revin	FR0009R	pm10	390	4.63	49.90	0.033	0.059	78.3
Peyrusse Vieille	FR0013R	pm10	200	0.18	43.62	0.021	0.020	-8.0
Saint-Nazaire-le-Désert	FR0023R	pm10	605	5.28	44.57	0.035	0.015	-56.1
Vemeuil	FR0025R	pm10	182	2.61	46.82	0.030	0.027	-9.5
Kergoff	FR0028R	pm10	307	-2.94	48.26	0.023	0.016	-29.8
High Muffles	GB0014R	aerosol	267	-0.81	54.33	0.023	0.011	-53.1
Auchencorth Moss	GB0048R	pm10	260	-3.24	55.79	0.015	0.010	-35.0
Chilbolton Observatory	GB1055R	pm10	78	-1.44	51.15	0.033	0.024	-27.1
Rucava	LV0010R	pm10	18	21.17	56.16	0.153	0.069	-55.1
Birkenes II	NO0002R	air+aerosol	219	8.25	58.39	0.021	0.022	6.2
Diabla Gora	PL0005R	pm10	157	22.07	54.15	0.252	0.201	-20.0
Zielonka	PL0009R	pm10	121	17.93	53.66	0.340	0.302	-11.3
Rãoș	SE0014R	air+aerosol	5	11.91	57.39	0.034	0.092	169.8
Hallahus	SE0020R	air+aerosol	190	13.15	56.04	0.010	0.035	240.5
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	0.010	0.019	88.5

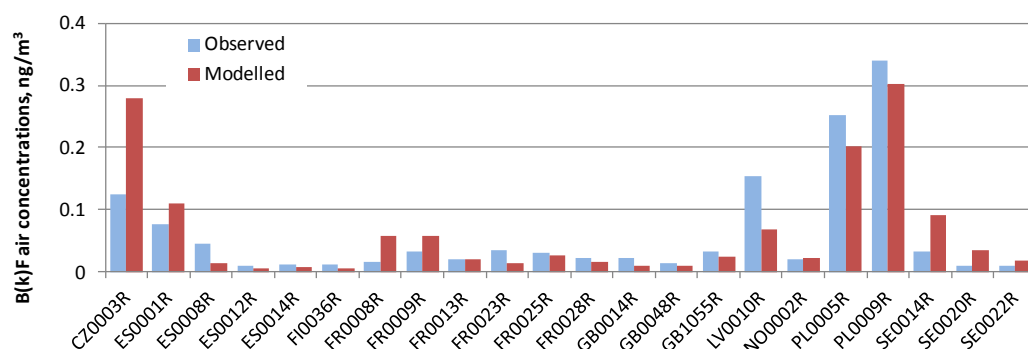
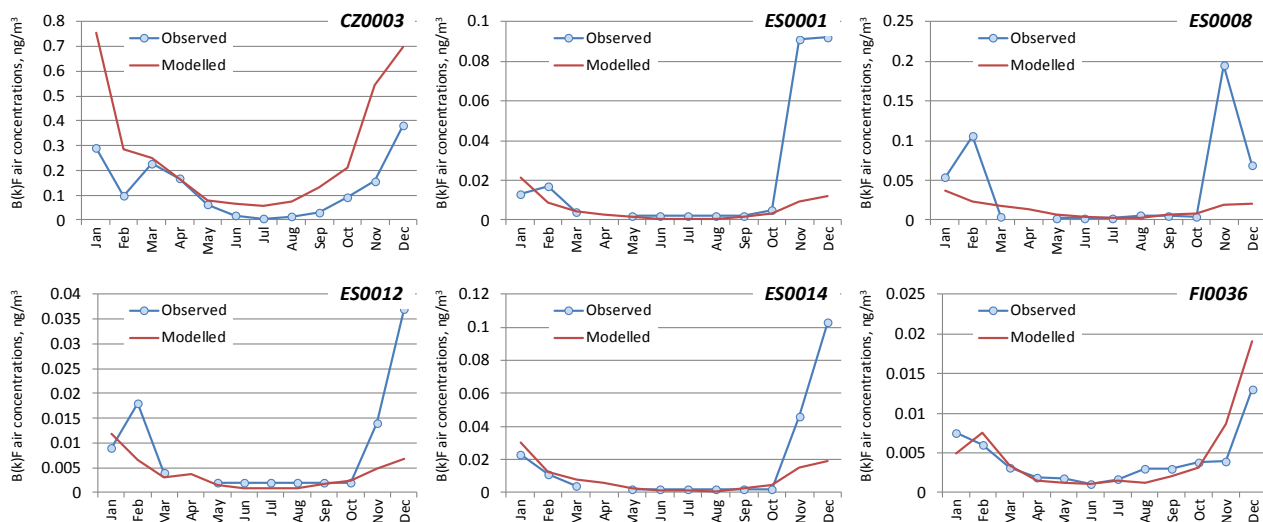


Fig. 4.5. Modelled and observed annual mean concentrations of B(k)F in air at the EMEP stations in 2020.



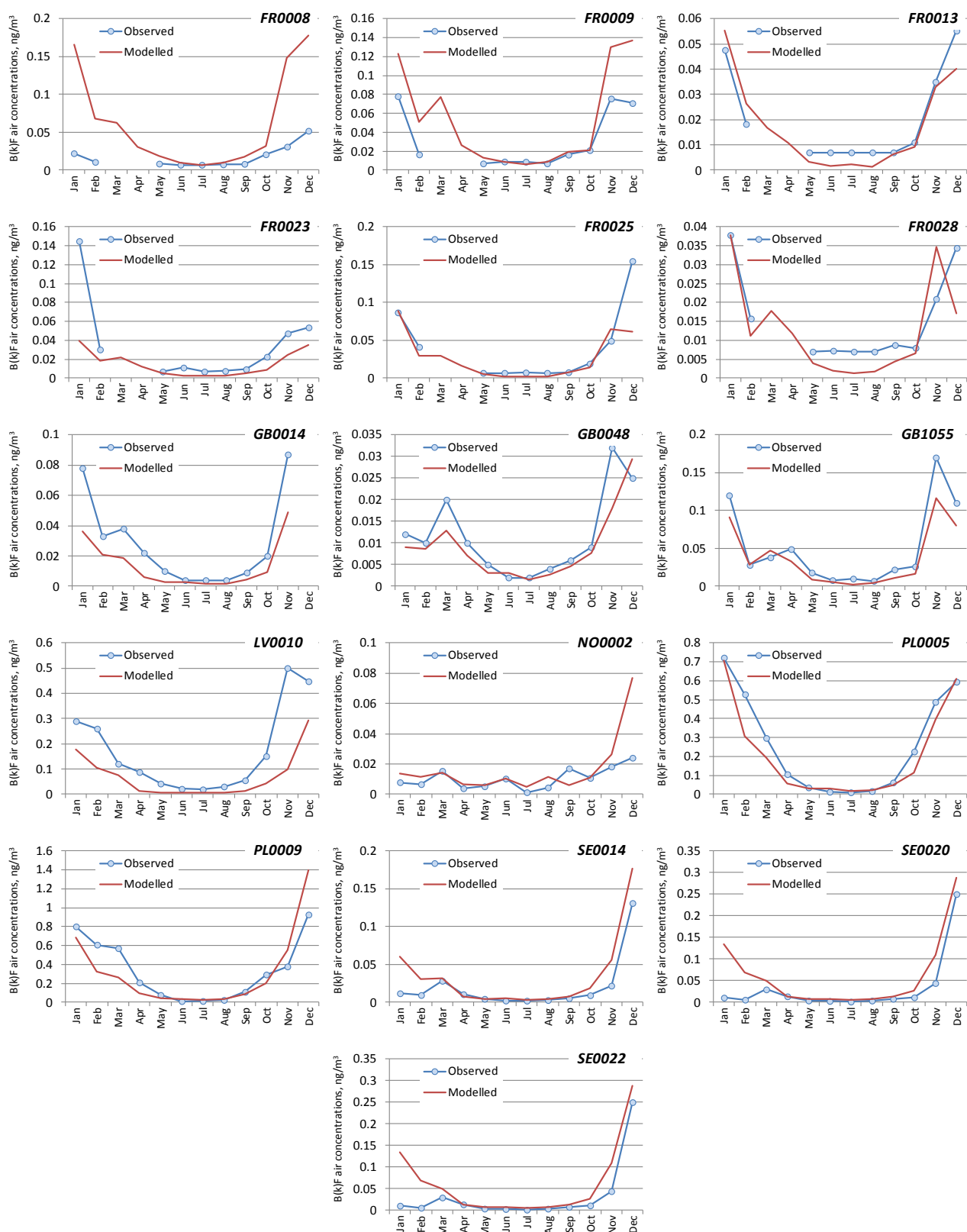


Fig. 4.6. Modelled and observed monthly mean concentrations of B(k)F in air at the EMEP stations in 2020.

4.1.4. Indeno(1,2,3-cd)pyrene (I(cd)P)

Table 4.5. Annual mean modelled and observed I(cd)P air concentrations, ng/m³, temporal correlation coefficient (Rc and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	Alt	Longitude	Latitude	Observed	Modelled	Bias
Houtem	BE0013R	pm10	2	2.58	51.02	0.065	0.092	41.8
Kosetice (NOAK)	CZ0003R	air+pm10	535	15.08	49.57	0.285	0.503	76.4
Westerland	DE0001R	air+pm10	12	8.31	54.93	0.033	0.073	122.6
Waldhof	DE0002R	air+pm10	74	10.76	52.80	0.149	0.168	12.7
Schmücke	DE0008R	air+pm10	937	10.77	50.65	0.105	0.191	81.0
Zingst	DE0009R	air+pm10	1	12.73	54.44	0.034	0.021	-38.5
San Pablo de los Montes	ES0001R	pm10	917	-4.35	39.55	0.020	0.040	96.6
Niembro	ES0008R	pm10	134	-4.85	43.44	0.010	0.014	36.5
Zarra	ES0012R	pm10	885	-1.10	39.08	0.010	0.014	36.5
Els Torms	ES0014R	pm10	470	0.74	41.39	0.024	0.030	23.7
Pallas (Matorova)	FI0036R	air+aerosol	340	24.24	68.00	0.007	0.008	19.8
Hyttiälä	FI0050R	pm10	181	24.28	61.85	0.064	0.065	0.9
Donon	FR0008R	pm10	775	7.13	48.50	0.033	0.082	147.5
Revin	FR0009R	pm10	390	4.63	49.90	0.064	0.075	17.9
Peyrusse Vieille	FR0013R	pm10	200	0.18	43.62	0.054	0.034	-36.8
Saint-Nazaire-le-Désert	FR0023R	pm10	605	5.28	44.57	0.055	0.022	-59.3
Vemeuil	FR0025R	pm10	182	2.61	46.82	0.069	0.045	-35.6
Kergoff	FR0028R	pm10	307	-2.94	48.26	0.033	0.031	-7.0
High Muffles	GB0014R	aerosol	267	-0.81	54.33	0.037	0.031	-17.8
Auchencorth Moss	GB0048R	pm10	260	-3.24	55.79	0.018	0.022	23.5
Chilbolton Observatory	GB1055R	pm10	78	-1.44	51.15	0.065	0.080	23.4
Rucava	LV0010R	pm10	18	21.17	56.16	0.246	0.114	-53.7
Birkenes II	NO0002R	air+aerosol	219	8.25	58.39	0.019	0.018	-1.3
Diabla Gora	PL0005R	pm10	157	22.07	54.15	0.509	0.256	-49.7
Zielonka	PL0009R	pm10	121	17.93	53.66	0.520	0.360	-30.7
Râó	SE0014R	air+aerosol	5	11.91	57.39	0.016	0.028	79.1
Hallahus	SE0020R	air+aerosol	190	13.15	56.04	0.024	0.054	122.4
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	0.019	0.027	40.6
Iskrba	SI0008R	pm10	520	14.87	45.57	0.211	0.153	-27.5

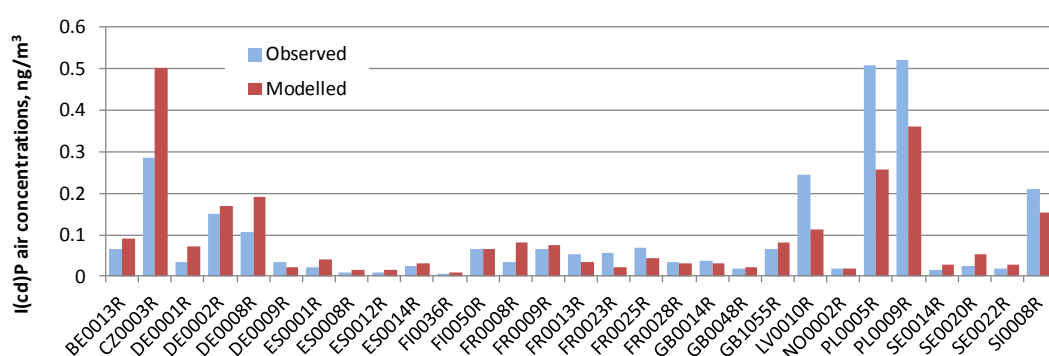
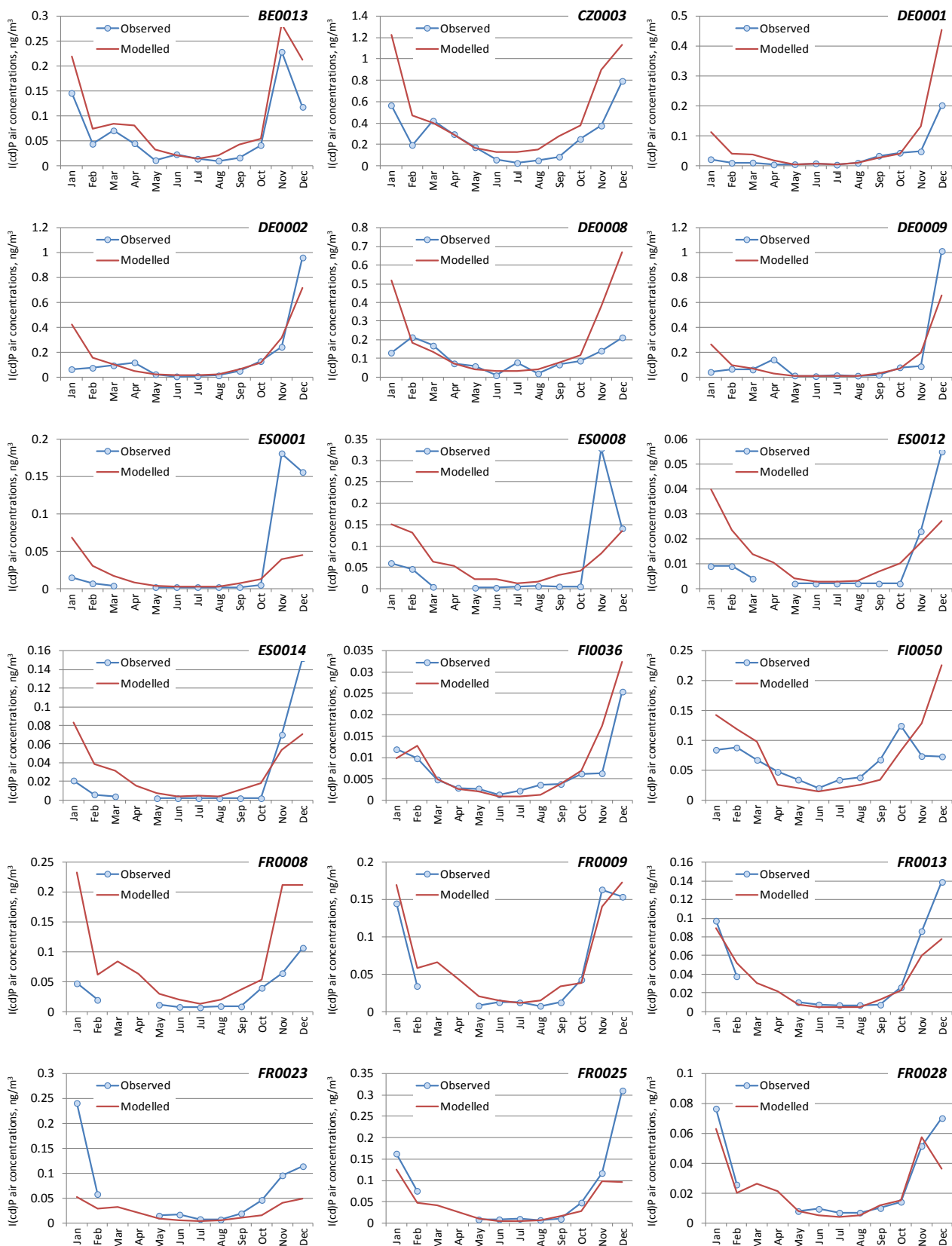


Fig. 4.7. Modelled and observed annual mean concentrations of I(cd)P in air at the EMEP stations in 2020.



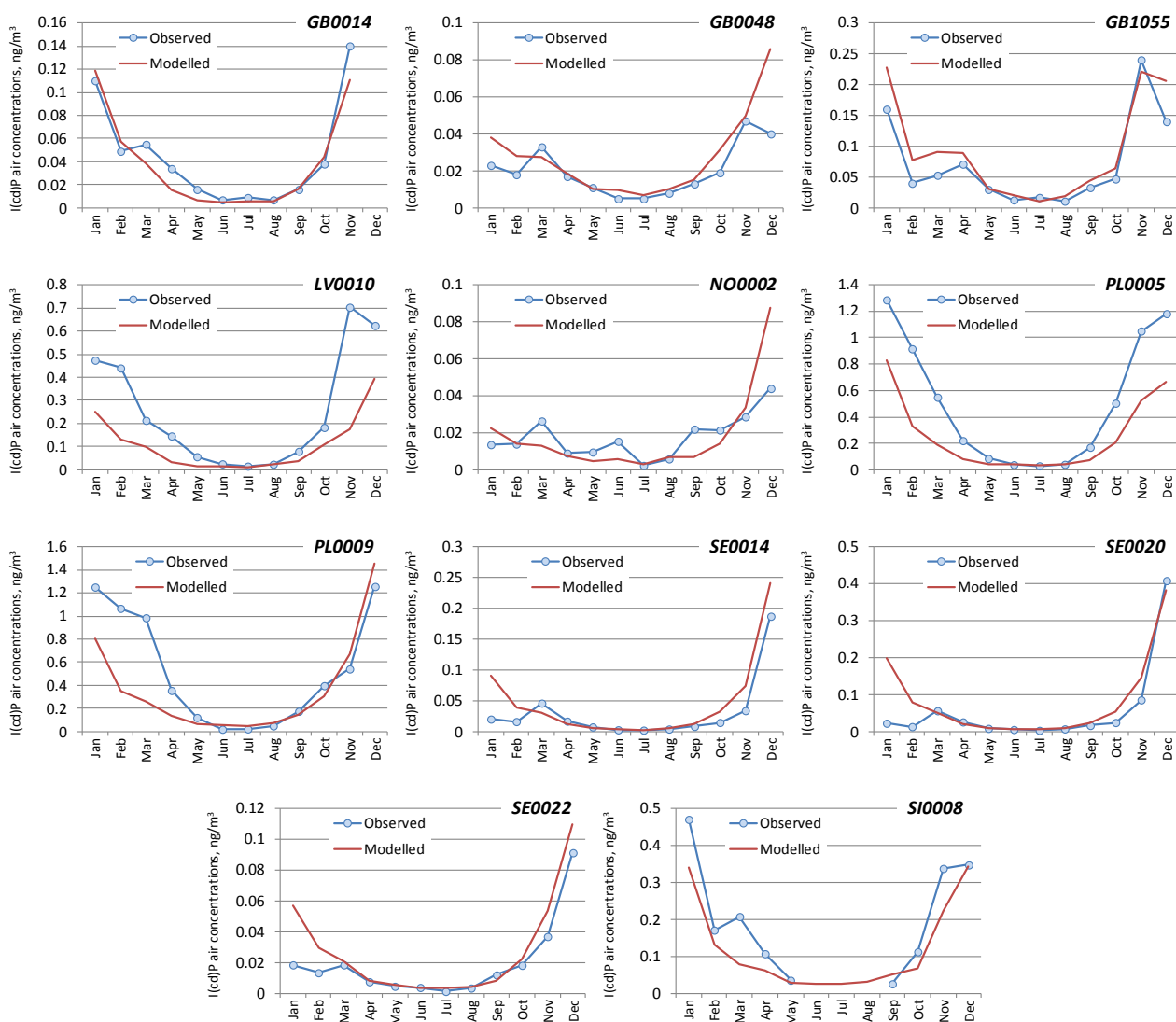


Fig. 4.8. Modelled and observed monthly mean concentrations of I(cd)P in air at the EMEP stations in 2020.

4.2. Hexachlorobenzene (HCB)

Table 4.6. Annual mean modelled and observed HCB air concentrations, ng/m^3 , temporal correlation coefficient (R_c) and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	Alt	Longitude	Latitude	Observed	Modelled	Bias
Kosetice (NOAK)	CZ0003R	air+pm10	535	15.08	49.57	66.38	40.64	-38.8
Pallas (Matorova)	FI0036R	air+aerosol	340	24.24	68.00	14.17	23.11	63.2
Storhofdi	IS0091R	air+aerosol	118	-20.29	63.40	3.76	18.87	401.6
Birkenes II	NO0002R	air+aerosol	219	8.25	58.39	36.48	30.10	-17.5
Zeppelin mountain (Ny-Ålesund)	NO0042G	air+aerosol	474	11.89	78.91	54.58	17.10	-68.7
Andøya	NO0090R	air+aerosol	380	16.01	69.28	24.68	20.54	-16.8
Råð	SE0014R	air+aerosol	5	11.91	57.39	7.73	33.06	327.8
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	9.58	27.67	188.8

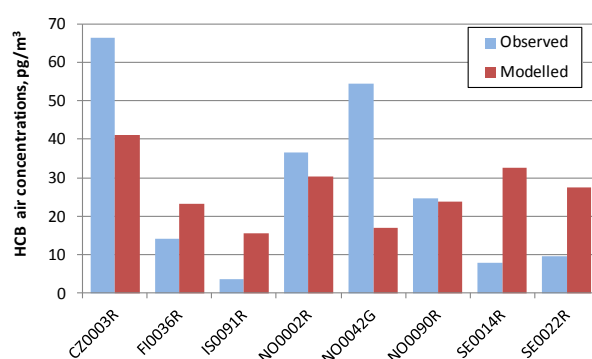


Fig. 4.9. Modelled and observed annual mean concentrations of HCB in air at the EMEP stations in 2020.

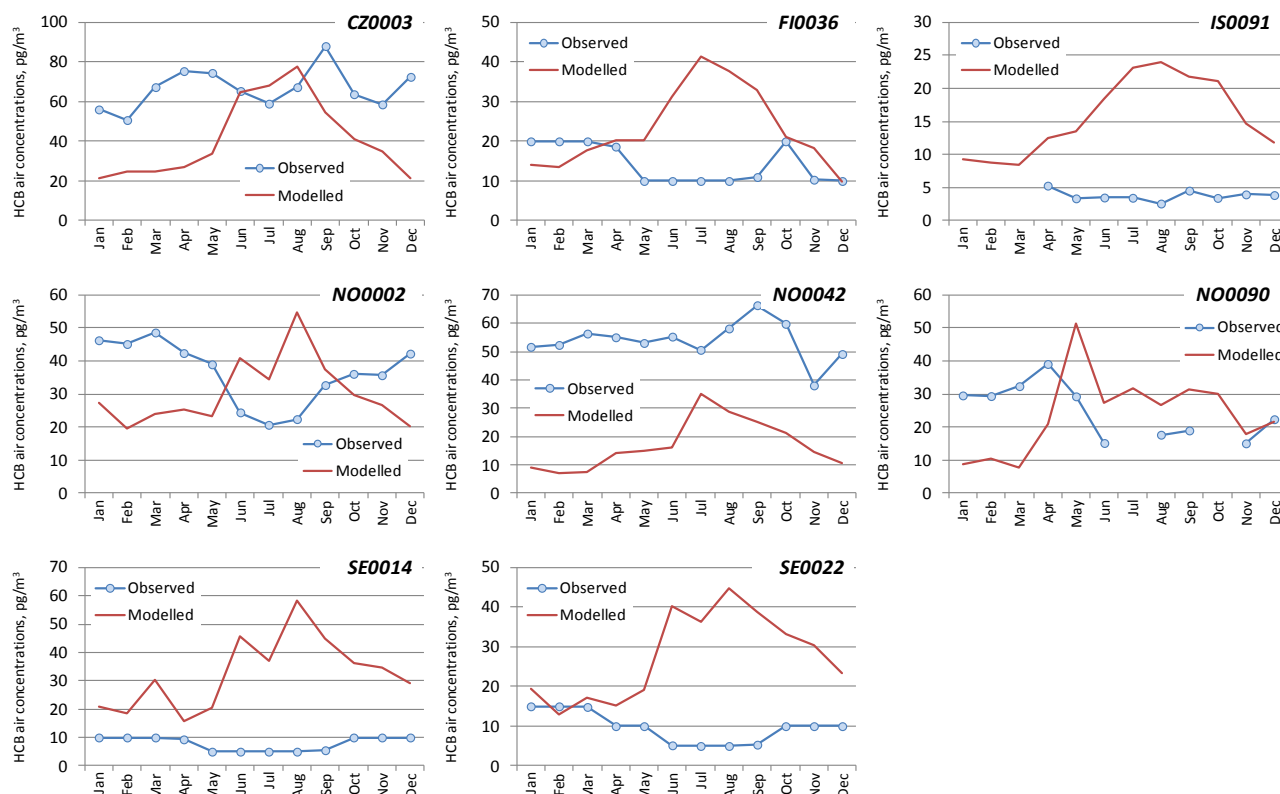


Fig. 4.10. Modelled and observed monthly mean concentrations of HCB in air at the EMEP stations in 2020.

4.3. Polychlorinated biphenyls (PCB-153)

Table 4.7. Annual mean modelled and observed PCB-153 air concentrations, pg/m^3 , temporal correlation coefficient (R_c and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	Alt	Longitude	Latitude	Observed	Modelled	Bias
Kosetice (NOAK)	CZ0003R	air+pm10	535	15.08	49.57	0.444	0.971	118.6
Pallas (Matorova)	FI0036R	air+aerosol	340	24.24	68.00	0.081	0.091	12.2
Storhofdi	IS0091R	air+aerosol	118	-20.29	63.40	0.219	0.102	-53.5
Birkenes II	NO0002R	air+aerosol	219	8.25	58.39	0.264	0.277	5.0
Zeppelin mountain (Ny-Ålesund)	NO0042G	air+aerosol	474	11.89	78.91	0.093	0.033	-64.2
Andøya	NO0090R	air+aerosol	380	16.01	69.28	0.147	0.035	-76.4
Råð	SE0014R	air+aerosol	5	11.91	57.39	0.769	0.599	-22.1
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	0.275	0.256	-7.0

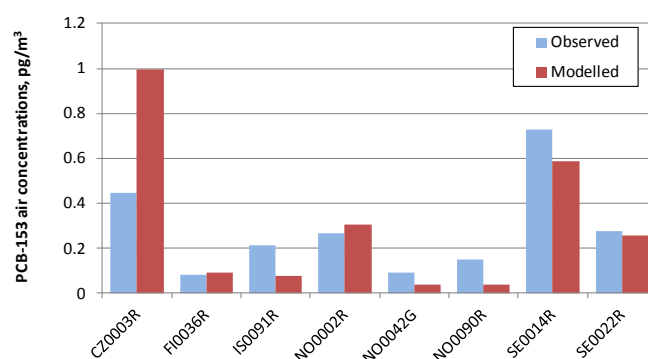


Fig. 4.11. Modelled and observed annual mean concentrations of PCB-153 in air at the EMEP stations in 2020.

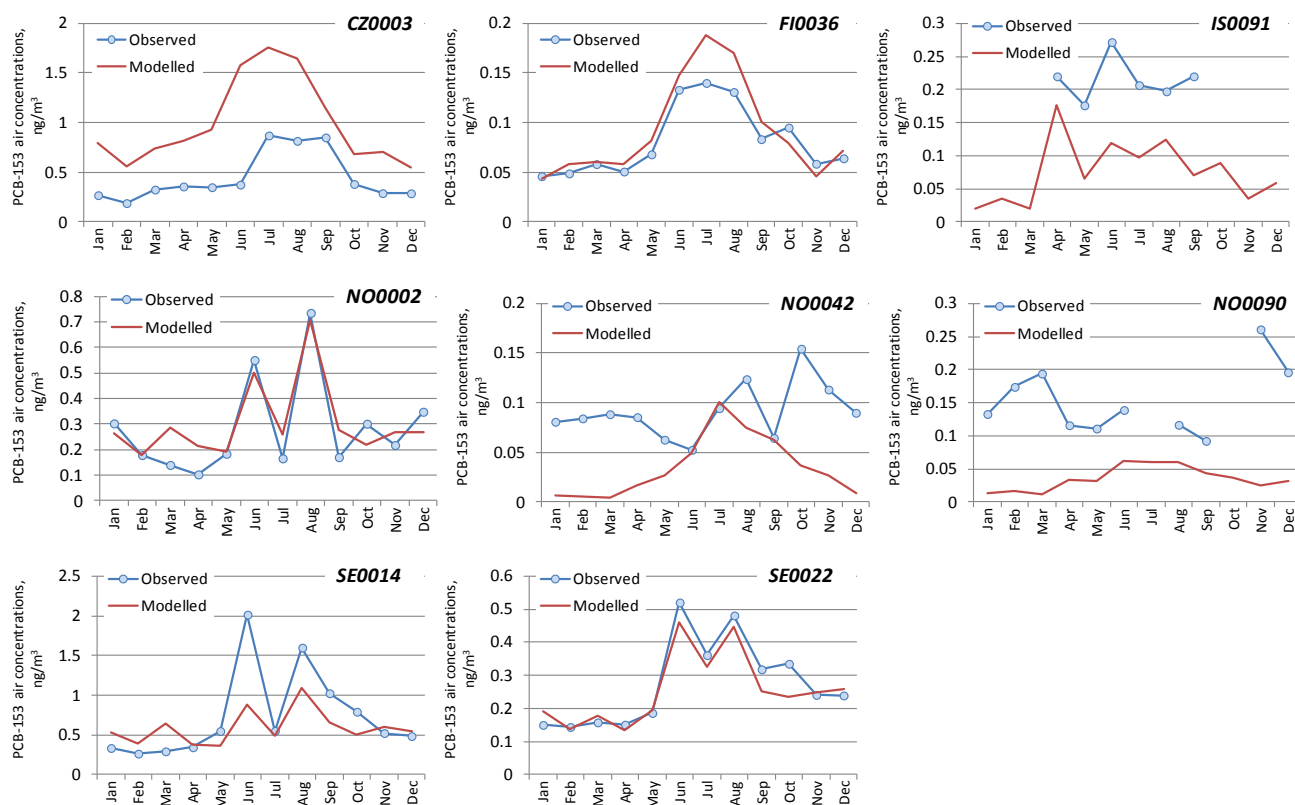


Fig. 4.12. Modelled and observed monthly mean concentrations of PCB-153 in air at the EMEP stations in 2020.

4.4. Polychlorinated dibenzo(p)dioxins and dibenzofurans (PCDD/Fs)

Table 4.8. Annual mean modelled and observed PCDD/F air concentrations, fg TEQ/m³, temporal correlation coefficient (Rc and relative bias (Bias) at EMEP stations in 2020.

Station name	Code	Type	Alt	Longitude	Latitude	Observed	Modelled	Bias
Råö	SE0014R	air+aerosol	5	11.91	57.39	2.676	2.884	7.8
Norunda Stenen	SE0022R	air+aerosol	45	17.51	60.09	2.837	1.005	-64.6

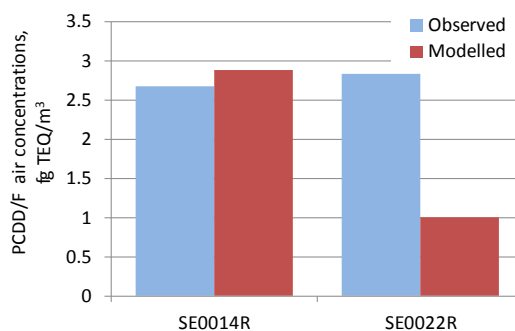


Fig. 4.13. Modelled and observed annual mean concentrations of PCDD/F in air at the EMEP stations in 2020.

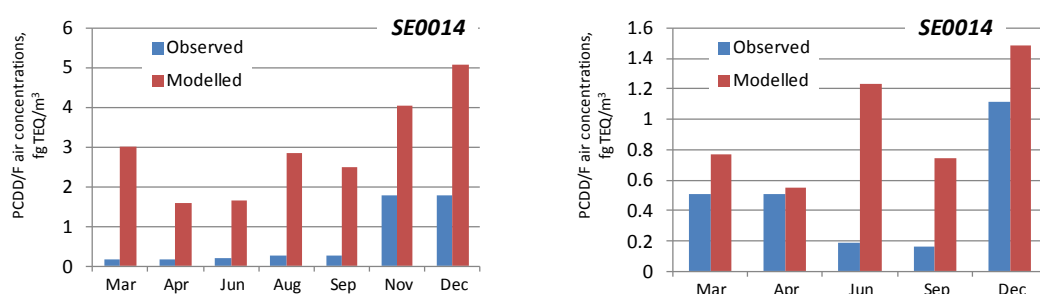


Fig. 4.14. Modelled and observed monthly mean concentrations of PCDD/F in air at the EMEP stations in 2020, fg TEQ/m³.

5. POLLUTION OF MARGINAL SEAS

5.1. Polycyclic aromatic hydrocarbons (PAHs)

5.1.1. Benzo[a]pyrene (B(a)P)

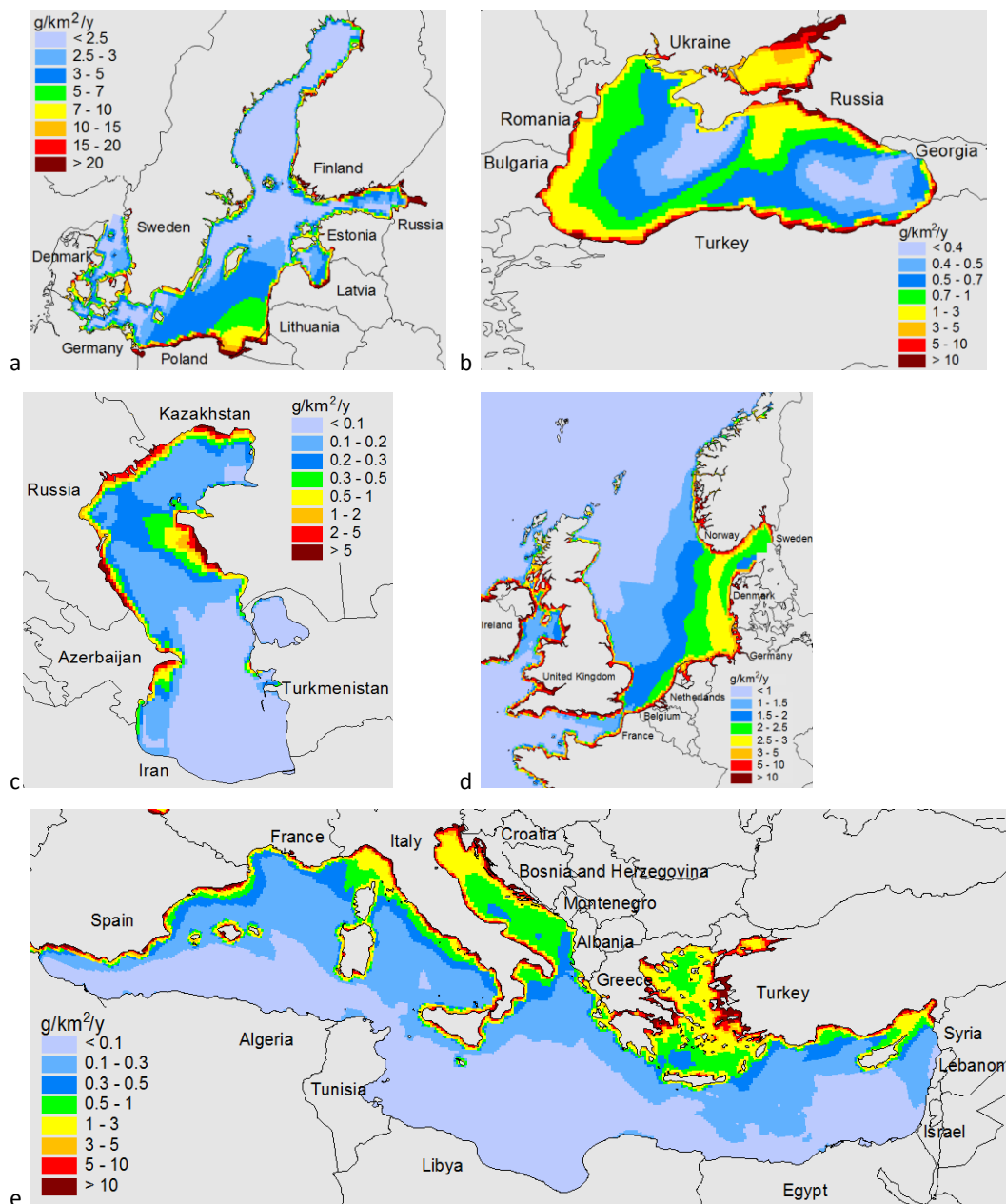


Figure 5.1. B(a)P atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.

5.1.2. Benzo[b]fluoranthene (B(b)F)

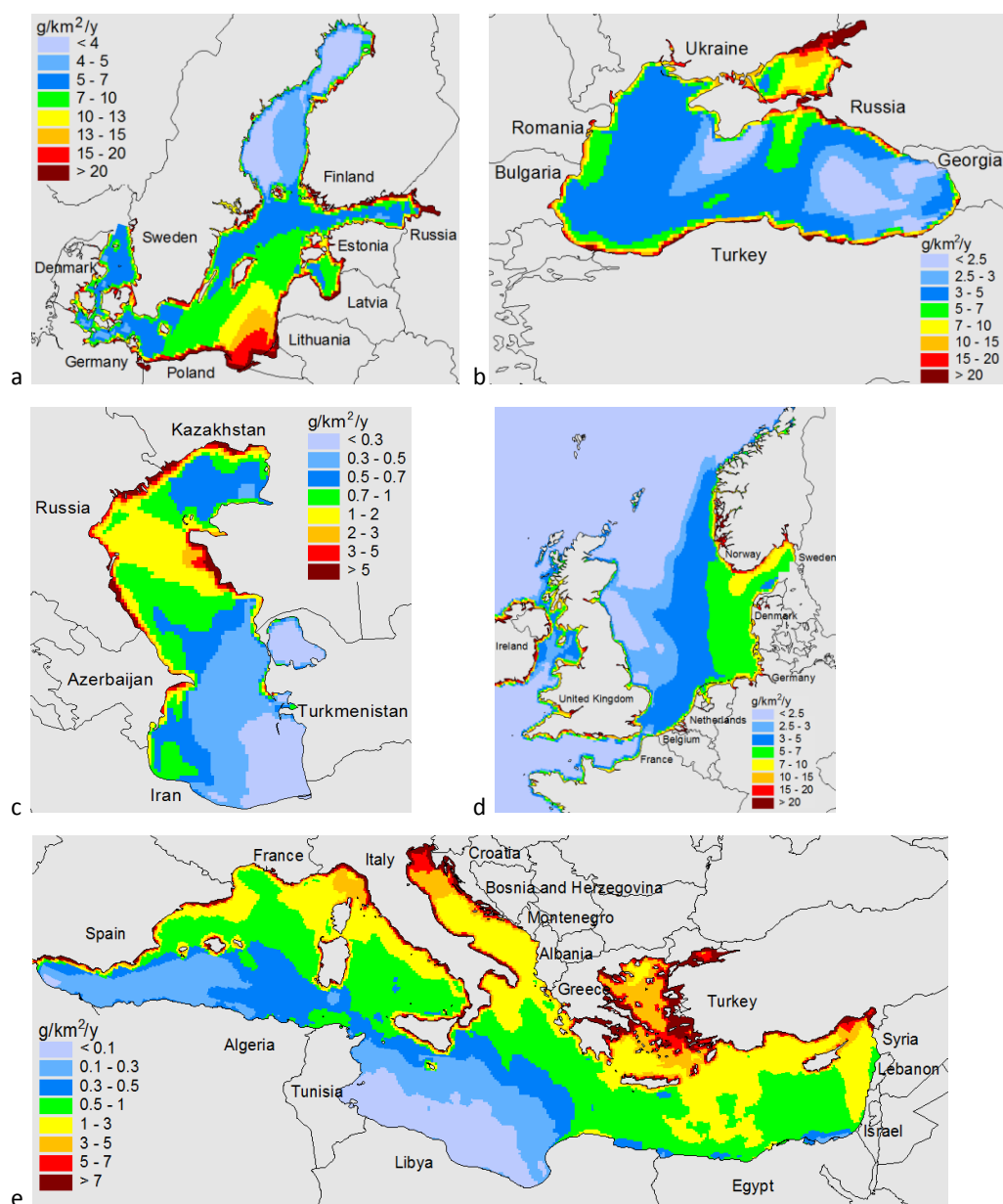


Figure 5.2. B(b)F atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.

5.1.3. Benzo[k]fluoranthene (B(k)F)

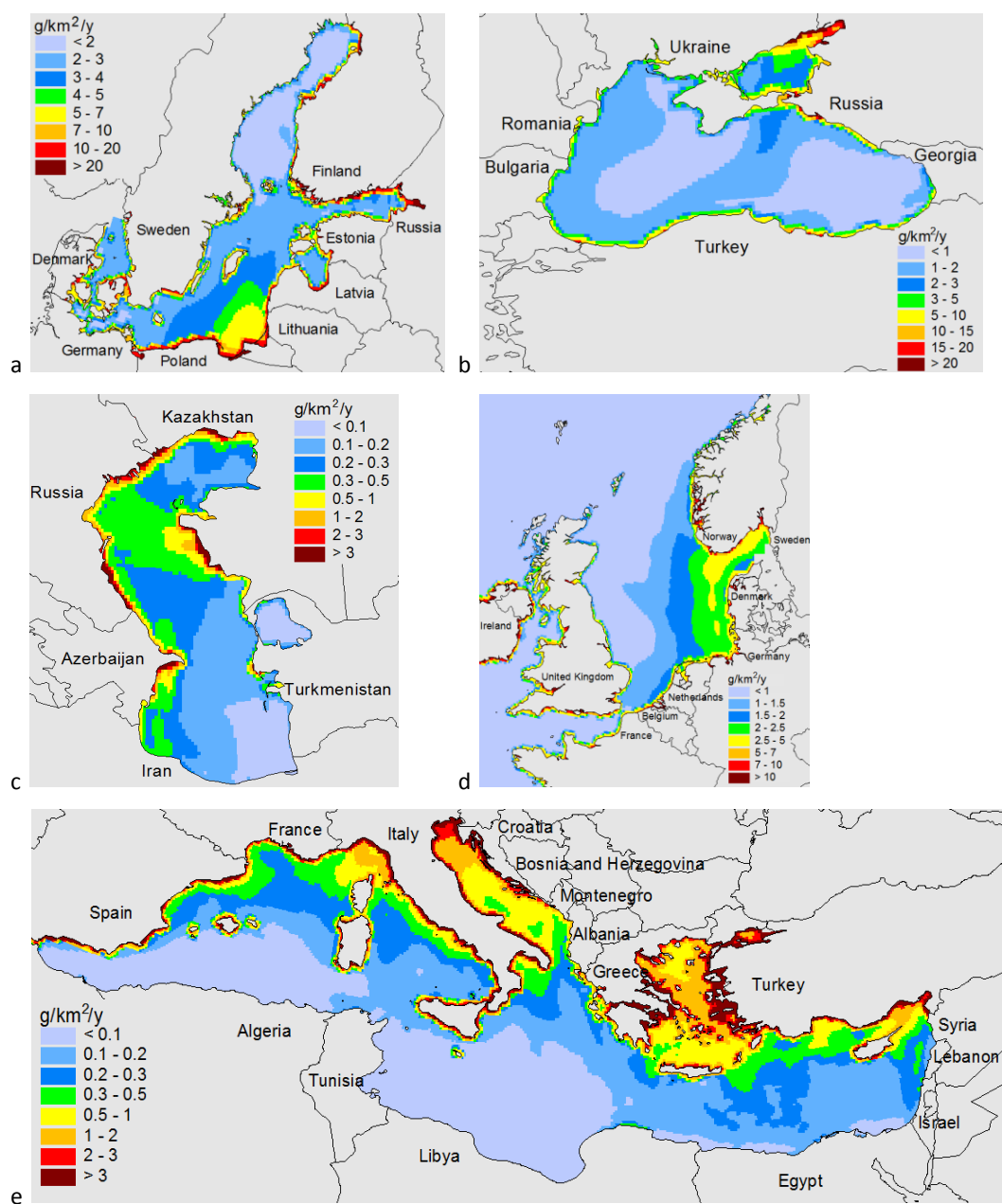


Figure 5.3. B(k)F atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.

5.1.4. Indeno[1,2,3-cd]pyrene (I(cd)P)

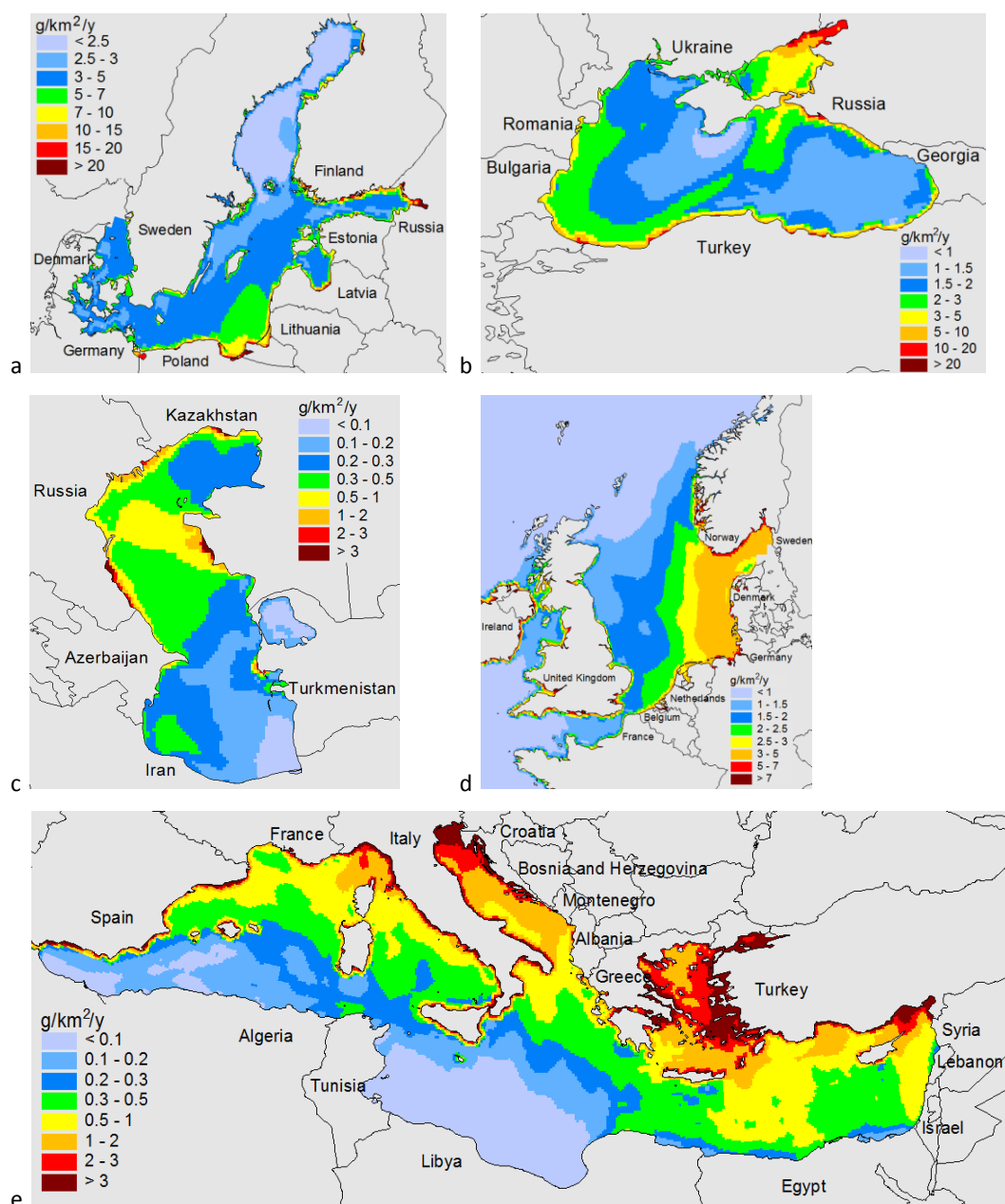


Figure 5.4. I(cd)P atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.

5.2. Polychlorinated dibenzo(p)dioxins and dibenzofurans (PCDD/Fs)

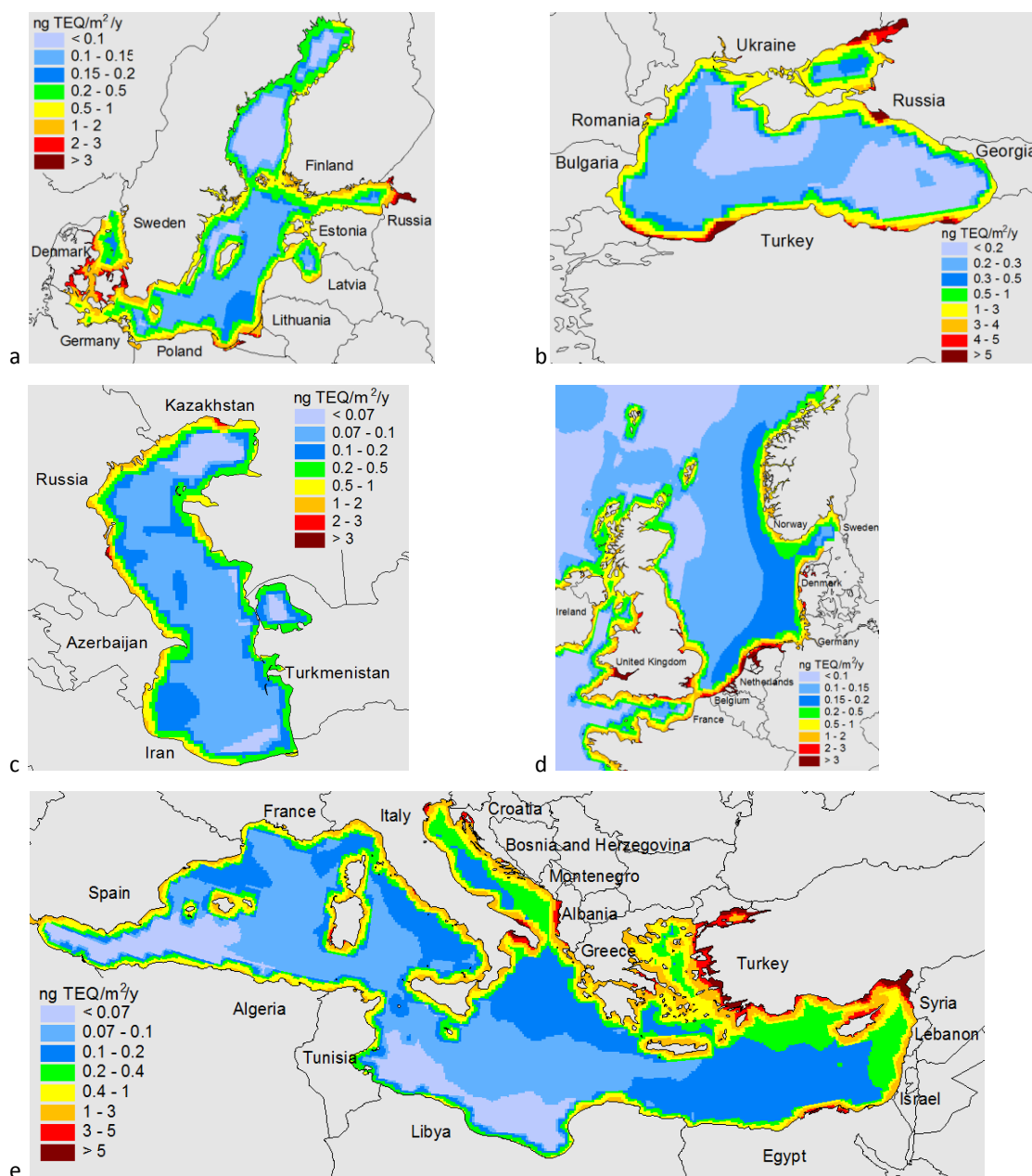


Figure 5.5. PCDD/Fs atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.

5.3. Hexachlorobenzene (HCB)

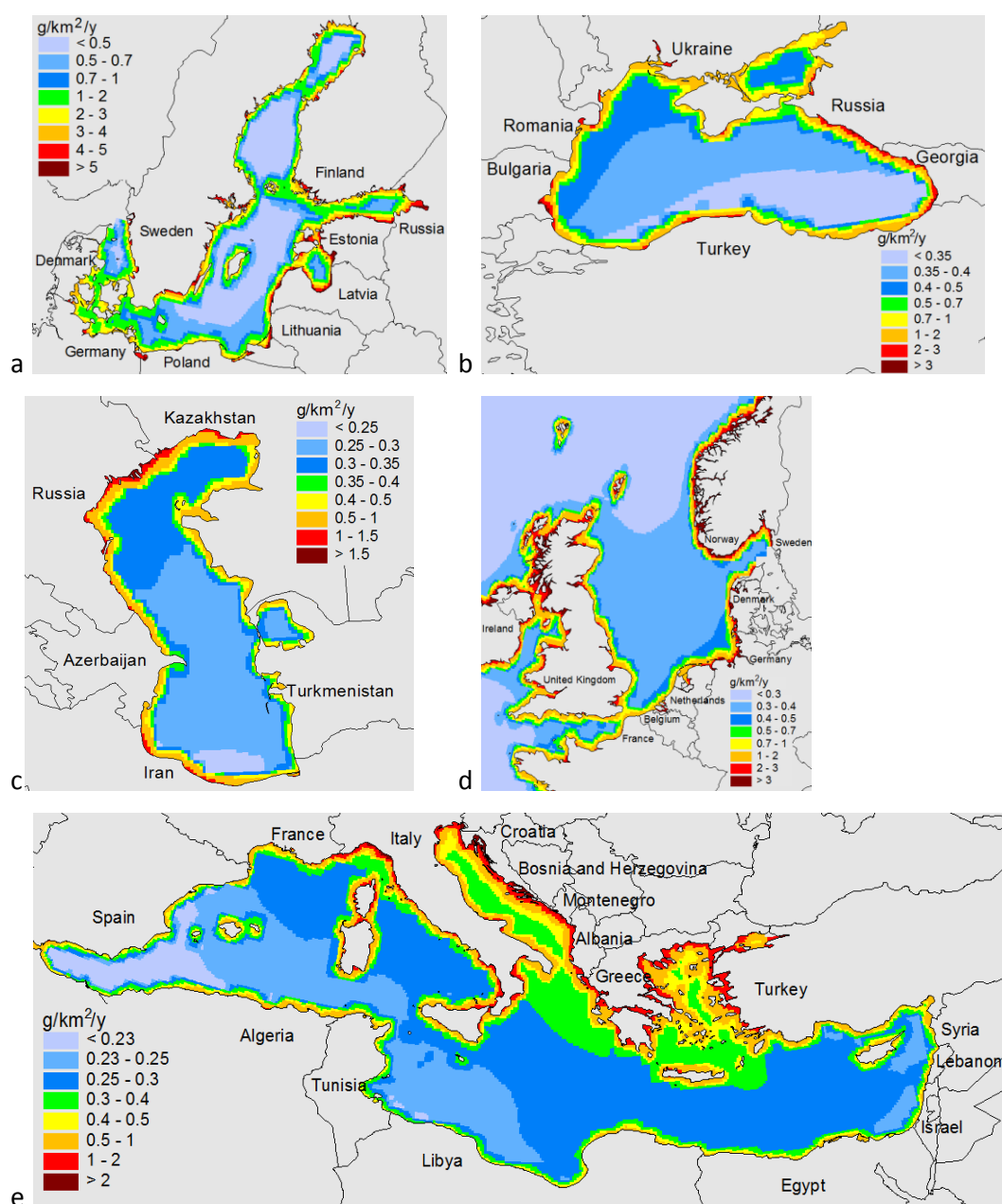


Figure 5.6. HCB atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.

5.4. Polychlorinated biphenyls (PCB-153)

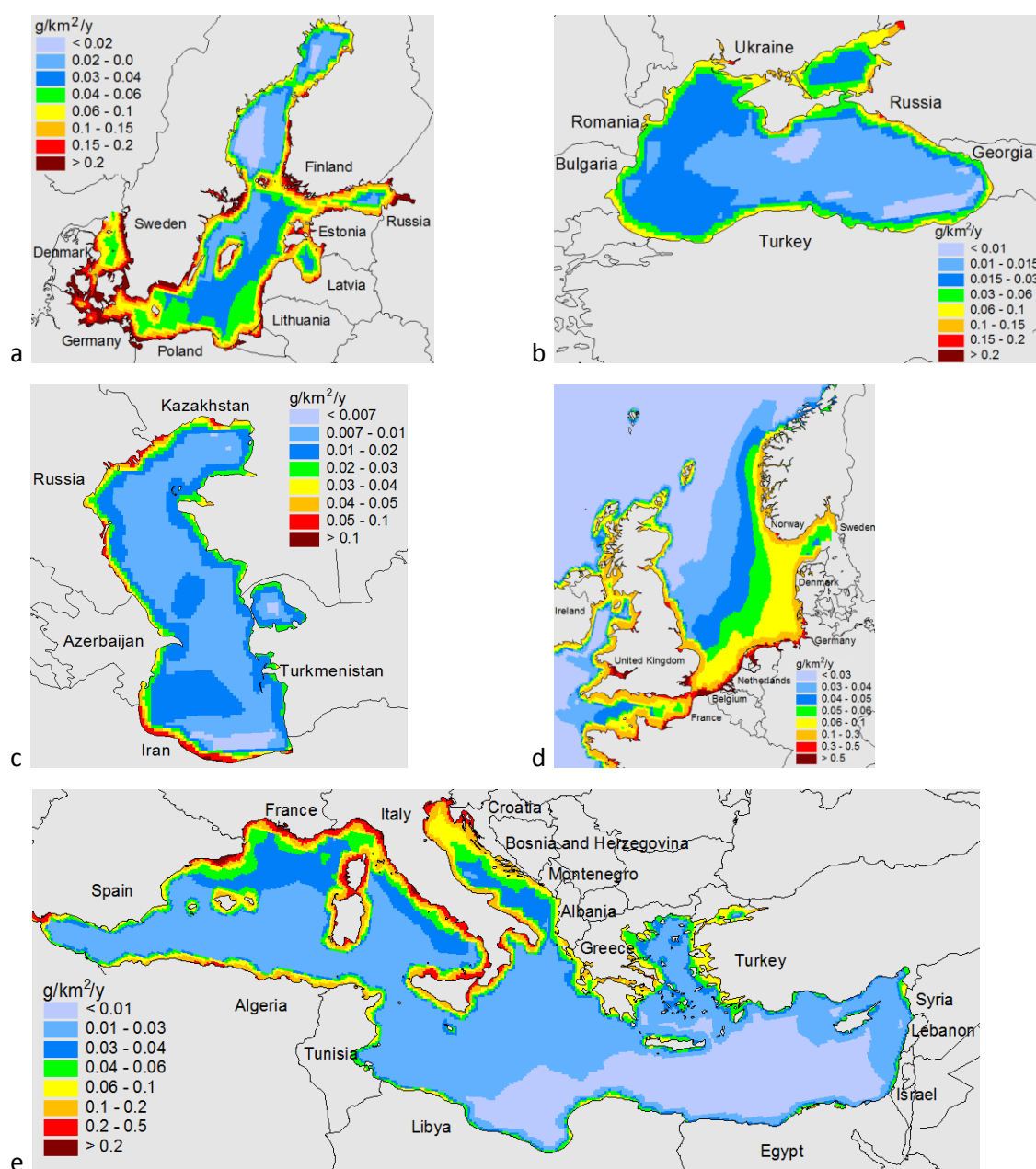


Figure 5.7. PCB-153 atmospheric input to the Baltic (a), Black (b), Caspian (c), North (d) and Mediterranean (e) Seas in 2020.