

Appendix D: Source allocation budgets for heavy metals

Country codes:

AL	Albania	ATL	Remaining NE Atlantic Ocean
AT	Austria	MED	Mediterranean Sea
BE	Belgium	BLS	Black Sea
BG	Bulgaria	NAT	Natural marine sources
DK	Denmark	BY	Belarus
FI	Finland	UA	Ukraine
FR	France	MD	Moldova, Republic of
GR	Greece	EE	Estonia
HU	Hungary	LV	Latvia
IS	Iceland	LT	Lithuania
IE	Ireland	CZ	Czech Republic
IT	Italy	SK	Slovakia
LU	Luxembourg	SI	Slovenia
NL	Netherlands	HR	Croatia
NO	Norway	BA	Bosnia and Herzegovina
PL	Poland	CS	Serbia and Montenegro
PT	Portugal	MK	Macedonia, Foremer Yougoslav Rep.
RO	Romania	KZ	Kazakhstan
ES	Spain	GE	Georgia
SE	Sweden	CY	Cyprus
CH	Switzerland	AM	Armenia
TR	Turkey	MT	Malta
GB	United Kingdom	ASI	Remaining Asiatic areas
REM	Remaining Land Areas	DE	Germany
BAS	Baltic Sea	RU	Russian Federation
NOS	North Sea		

Table D1. Contributions of HELCOM countries and other countries within EMEP region to lead depositions over the Baltic Sea sub-basins in 2002. Units: tonnes / year

Country	GUB	GUF	GUR	BAP	BES	KAT	BAS
DK	0.04	0.02	0.02	0.48	0.25	0.29	1.10
EE	0.42	3.32	0.21	0.51	0.01	0.01	4.48
FI	4.17	1.31	0.06	0.49	0.01	0.01	6.03
DE	1.44	0.66	0.78	15.69	3.36	1.26	23.18
LT	0.15	0.06	0.12	0.60	0.02	0.01	0.97
LV	0.11	0.09	0.22	0.35	0.01	0.01	0.79
PL	2.65	0.86	0.84	17.10	1.19	0.78	23.43
RU	1.11	3.18	0.33	4.17	0.17	0.12	9.08
SE	1.36	0.08	0.06	0.94	0.06	0.10	2.60
HELCOM	11	10	3	40	5	3	72
AL	0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.01	0.08
AT	0.04	0.01	0.01	0.12	0.01	0.01	0.20
BE	0.24	0.09	0.11	1.98	0.66	0.42	3.50
BG	0.12	0.04	0.02	0.54	0.05	0.04	0.80
BA	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.02
BY	0.16	0.07	0.05	0.57	0.02	0.02	0.90
CH	0.28	0.06	0.06	0.89	0.12	0.11	1.51
CY	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
CZ	0.15	0.05	0.04	0.64	0.07	0.04	0.98
ES	0.28	0.08	0.05	0.68	0.15	0.16	1.40
FR	0.32	0.11	0.10	1.55	0.42	0.33	2.83
GB	0.22	0.10	0.11	1.69	0.52	0.51	3.15
GR	0.07	0.02	0.01	0.52	0.04	0.04	0.71
HR	0.13	0.05	0.02	0.62	0.03	0.04	0.89
HU	0.05	0.02	0.01	0.19	0.02	0.01	0.30
IE	0.01	0.01	0.01	0.09	0.02	0.03	0.16
IS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
IT	0.71	0.20	0.07	2.47	0.24	0.27	3.97
MD	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.02
MK	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NL	0.12	0.05	0.06	1.00	0.39	0.26	1.88
NO	0.06	0.01	0.01	0.08	0.01	0.02	0.18
PT	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
RO	0.64	0.30	0.10	2.40	0.16	0.16	3.77
SK	0.14	0.05	0.03	0.54	0.04	0.03	0.83
SI	0.02	0.01	< 0.01	0.07	0.01	0.01	0.11
UA	0.12	0.06	0.03	0.40	0.02	0.02	0.65
CS	0.24	0.11	0.04	1.11	0.08	0.08	1.65
AM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AZ	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.03
KZ	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
GE	0.01	0.01	< 0.01	0.03	< 0.01	< 0.01	0.05
TR	0.04	0.01	0.01	0.29	0.02	0.02	0.38
LU	< 0.01	< 0.01	< 0.01	0.03	0.01	< 0.01	0.04
MC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NSR	9.66	3.28	2.14	25.08	3.23	3.26	46.65
Total	25	14	6	84	11	8	149

BAS – the whole Baltic Sea basin

NSR – re-emission and natural sources

Table D2. Contributions of HELCOM countries and other countries within EMEP region to lead depositions over the Baltic Sea catchments in 2002. Units: tonnes / year

Country	GUB	GUF	GUR	BAP	BES	KAT	CAT
DK	0.1	0.1	0.1	0.8	0.4	0.7	2.2
EE	1.6	21.5	1.3	0.6	0.01	0.1	25.0
FI	11.9	13.7	0.3	0.4	0.01	0.1	26.4
DE	3.6	6.2	5.3	74.1	6.1	4.0	99.4
LT	0.4	1.3	3.0	5.1	0.03	0.1	9.9
LV	0.3	2.0	2.7	0.9	0.01	0.1	6.0
PL	5.2	11.0	11.2	313.2	1.9	2.5	345.0
RU	5.5	77.4	9.9	17.1	0.3	0.9	111.0
SE	2.9	0.7	0.3	2.4	0.1	1.0	7.5
HELCOM	31	134	34	415	9	9	632
AL	0.02	0.04	0.01	0.26	< 0.01	0.01	0.35
AT	0.07	0.12	0.08	0.79	0.02	0.02	1.11
BE	0.70	0.84	0.67	5.41	0.98	1.26	9.86
BG	0.41	0.42	0.17	2.49	0.07	0.25	3.81
BA	0.01	0.02	0.01	0.07	< 0.01	< 0.01	0.11
BY	0.53	1.60	2.27	7.67	0.04	0.17	12.29
CH	0.57	0.79	0.53	4.71	0.17	0.28	7.06
CY	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.02
CZ	0.28	0.58	0.48	14.14	0.10	0.12	15.70
ES	0.68	0.74	0.26	1.98	0.23	0.64	4.54
FR	0.86	1.02	0.61	4.76	0.61	1.06	8.92
GB	0.82	0.95	0.68	3.82	0.79	1.65	8.71
GR	0.22	0.22	0.09	1.94	0.06	0.17	2.71
HR	0.33	0.54	0.19	2.79	0.05	0.15	4.04
HU	0.10	0.20	0.12	1.38	0.03	0.05	1.87
IE	0.06	0.06	0.04	0.19	0.03	0.09	0.46
IS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
IT	1.48	2.03	0.75	8.35	0.31	0.57	13.50
MD	0.01	0.02	0.01	0.06	< 0.01	< 0.01	0.11
MK	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NL	0.33	0.41	0.33	2.38	0.58	0.80	4.83
NO	0.61	0.15	0.06	0.18	0.01	0.19	1.20
PT	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
RO	2.04	3.61	1.52	13.51	0.26	0.87	21.81
SK	0.30	0.60	0.38	5.71	0.07	0.12	7.18
SI	0.04	0.06	0.03	0.33	0.01	0.02	0.48
UA	0.45	1.01	0.49	3.42	0.04	0.12	5.52
CS	0.65	1.11	0.41	5.38	0.13	0.35	8.04
AM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AZ	0.06	0.10	0.01	0.04	< 0.01	0.01	0.22
KZ	< 0.01	0.01	< 0.01	0.01	< 0.01	< 0.01	0.03
GE	0.05	0.14	0.02	0.09	< 0.01	0.01	0.31
TR	0.22	0.26	0.08	1.32	0.02	0.16	2.06
LU	0.01	0.01	0.01	0.08	0.01	0.01	0.13
MC	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NSR	24.5	32.2	13.5	65.6	4.8	12.0	152.5
Total	68	184	58	573	18	31	932

CAT – the whole Baltic Sea catchment area

NSR – re-emission and natural sources

Table D3. Contributions of HELCOM countries and other countries within EMEP region to cadmium depositions over the Baltic Sea sub-basins in 2002. Units: kg / year

Country	GUB	GUF	GUR	BAP	BES	KAT	BAS
DK	4.8	1.9	2.2	66.6	36.3	37.1	149.0
EE	6.9	87.0	4.3	8.5	0.1	0.1	106.9
FI	155.3	40.6	1.8	15.4	0.2	0.2	213.5
DE	38.5	18.6	21.7	413.5	70.6	26.2	589.1
LT	11.6	4.3	9.5	41.0	1.4	0.9	68.6
LV	7.4	5.4	16.3	22.0	0.6	0.3	52.1
PL	256.4	78.9	83.4	1683.7	106.7	74.6	2283.6
RU	36.8	66.9	11.4	146.1	5.6	3.9	270.8
SE	50.3	5.0	3.3	47.8	2.5	4.1	113.0
HELCOM	568	309	154	2445	224	147	3847
AL	0.27	0.13	0.05	1.66	0.10	0.09	2.3
AT	3.23	0.84	0.57	10.46	1.04	0.89	17.0
BE	5.25	2.04	2.47	42.32	14.27	9.16	75.5
BG	7.08	1.81	0.98	33.00	2.91	2.64	48.4
BA	0.23	0.12	0.04	1.15	0.06	0.06	1.7
BY	6.87	2.59	1.67	24.48	1.04	0.83	37.5
CH	6.58	1.55	1.53	20.42	2.59	2.44	35.1
CY	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01
CZ	9.75	3.37	2.93	41.49	4.25	2.42	64.2
ES	16.26	4.76	2.67	39.35	8.17	8.25	79.5
FR	15.01	5.39	5.03	76.37	22.56	17.22	141.6
GB	5.03	2.22	2.36	40.32	13.41	12.81	76.1
GR	0.41	0.11	0.08	3.28	0.23	0.22	4.3
HR	1.11	0.37	0.12	4.94	0.28	0.31	7.1
HU	4.52	1.44	0.94	17.76	1.52	1.24	27.4
IE	0.18	0.09	0.09	1.41	0.40	0.46	2.6
IS	0.01	< 0.01	< 0.01	0.03	< 0.01	0.01	0.05
IT	16.94	4.27	1.77	55.70	5.41	6.15	90.2
MD	0.27	0.16	0.04	0.95	0.04	0.04	1.5
MK	0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.01	0.1
NL	2.83	1.13	1.30	22.98	9.23	6.31	43.8
NO	6.77	1.98	1.36	10.54	0.81	2.00	23.5
PT	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
RO	33.90	14.17	5.82	125.80	8.44	8.40	196.5
SK	14.25	4.44	3.13	59.11	5.36	3.84	90.1
SI	3.07	0.75	0.30	10.55	0.76	0.87	16.3
UA	2.10	1.09	0.40	7.64	0.38	0.36	12.0
CS	5.28	2.53	0.83	25.44	1.78	1.76	37.6
AM	0.13	0.06	0.01	0.17	0.01	0.01	0.4
AZ	0.24	0.08	0.01	0.22	0.04	0.03	0.6
KZ	0.01	0.01	< 0.01	0.03	0.01	0.01	0.1
GE	0.27	0.18	0.02	0.57	0.06	0.04	1.1
TR	0.73	0.26	0.09	5.74	0.27	0.30	7.4
LU	0.11	0.04	0.05	0.78	0.16	0.12	1.3
MC	0.02	< 0.01	< 0.01	0.04	0.01	0.01	0.1
NSR	506.74	172.52	111.99	1311.57	166.05	166.75	2435.6
Total	1243	539	303	4441	496	404	7425

BAS – the whole Baltic Sea basin

NSR – re-emission and natural sources

Table D4. Contributions of HELCOM countries and other countries within EMEP region to cadmium depositions over the Baltic Sea catchments in 2002. Units: kg / year

Country	GUB	GUF	GUR	BAP	BES	KAT	CAT
DK	12	14	12	99	51	92	279
EE	27	333	26	10	0.2	1.3	397
FI	377	439	10	14	0.3	2.1	843
DE	88	161	147	2540	130	85	3151
LT	25	77	174	395	2	7	679
LV	18	105	194	52	0.7	3	374
PL	472	983	1040	27410	169	236	30311
RU	149	2085	320	797	9	26	3386
SE	113	37	14	97	4	44	308
HELCOM	1281	4234	1937	31414	366	497	39728
AL	0.6	1.2	0.4	7.5	0.1	0.3	10
AT	6	11	7	68	1	2	94
BE	15	18	14	115	21	27	210
BG	23	23	9	150	5	15	224
BA	0.6	1.1	0.4	4.7	0.1	0.3	7
BY	21	60	72	288	2	7	450
CH	12	18	12	105	4	6	157
CY	< 0.01	0.01	< 0.01	0.05	< 0.01	< 0.01	0.1
CZ	17	37	32	762	7	7	861
ES	38	42	14	110	12	34	250
FR	39	46	29	232	33	54	434
GB	19	20	15	90	20	41	206
GR	1.2	1.3	0.5	11.7	0.3	1.0	16
HR	2.5	4.0	1.4	22.0	0.4	1.1	31
HU	8.9	18.3	11.3	127.8	2.4	4.0	173
IE	0.9	0.9	0.6	3.1	0.6	1.5	8
IS	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.3
IT	32.2	41.9	16.8	191.0	7.0	12.8	302
MD	0.9	1.6	0.6	4.1	0.1	0.3	8
MK	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	0.4
NL	7.8	9.1	7.4	55.2	13.7	19.3	112
NO	51.1	19.0	7.8	24.8	1.1	31.5	135
PT	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
RO	97	187	83	755	14	40	1177
SK	25	56	39	721	8	11	861
SI	6.2	8.8	4.2	50.0	1.0	2.4	73
UA	7.2	16.5	8.1	42.8	0.6	2.2	77
CS	13.4	25.0	9.4	118.1	2.8	7.8	177
AM	0.8	1.5	0.2	0.7	< 0.1	0.1	3
AZ	1.5	2.3	0.3	0.9	0.1	0.1	5
KZ	0.1	0.2	0.1	0.2	< 0.1	< 0.1	0.6
GE	1.5	3.8	0.5	2.0	0.1	0.2	8
TR	3.7	4.6	1.4	25.6	0.4	2.7	38
LU	0.3	0.4	0.3	2.4	0.3	0.3	4
MC	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.2
NSR	1158	1631	701	3445	246	609	7789
Total	2891	6545	3036	38949	769	1440	53629

CAT – the whole Baltic Sea catchment area

NSR – re-emission and natural sources

Table D5. Contributions of HELCOM countries and other countries within EMEP region to mercury depositions over the Baltic Sea sub-basins in 2002. Units: kg / year.

Country	GUB	GUF	GUR	BAP	BES	KAT	BAS
DK	4.7	1.8	2.0	55.6	30.3	33.2	127.6
EE	2.6	28.6	1.1	3.0	0.07	0.05	35.4
FI	24.0	9.5	0.3	2.5	0.05	0.06	36.5
DE	33.2	15.9	18.0	437.4	78.2	22.7	605.4
LT	0.5	0.5	1.4	2.0	0.04	0.03	4.5
LV	0.6	0.3	0.7	3.6	0.07	0.06	5.3
PL	33.0	11.0	10.8	246.8	17.8	13.0	332.4
RU	1.7	3.9	0.6	6.3	0.3	0.2	13.1
SE	42.1	2.3	1.5	23.8	1.4	3.0	74.0
HELCOM	142	74	36	781	128	72	1234
AL	0.03	0.01	0.01	0.23	0.02	0.02	0.31
AT	0.6	0.2	0.1	2.5	0.3	0.3	4.0
BE	3.1	1.0	1.0	18.3	5.3	3.6	32.3
BG	0.6	0.1	0.1	3.5	0.3	0.3	4.9
BA	0.04	0.02	0.01	0.23	0.02	0.02	0.33
BY	0.5	0.3	0.2	2.6	0.1	0.1	3.8
CH	1.7	0.5	0.3	6.1	0.8	0.6	10.1
CY	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
CZ	2.8	1.0	0.9	15.3	1.9	1.0	23.0
ES	6.1	1.4	0.8	16.0	3.1	3.0	30.4
FR	6.6	2.2	1.8	30.5	7.7	6.0	54.7
GB	5.8	2.2	2.1	31.0	8.6	8.6	58.3
GR	0.5	0.2	0.1	4.4	0.4	0.4	5.9
HR	0.10	0.04	0.02	0.55	0.03	0.04	0.78
HU	1.8	0.7	0.4	9.2	0.8	0.8	13.7
IE	0.8	0.3	0.3	3.5	0.8	1.0	6.7
IS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
IT	2.2	0.7	0.3	8.8	0.9	1.0	13.7
MD	0.08	0.05	0.03	0.47	0.02	0.03	0.68
MK	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.03
NL	0.8	0.3	0.3	5.5	1.8	1.2	9.9
NO	3.8	0.8	0.5	4.9	0.3	1.0	11.4
PT	0.02	0.01	< 0.01	0.05	0.01	0.02	0.10
RO	1.4	0.9	0.5	8.3	0.6	0.7	12.3
SK	1.4	0.6	0.3	7.4	0.6	0.6	10.8
SI	0.15	0.06	0.02	0.74	0.05	0.07	1.09
UA	1.01	0.79	0.43	4.96	0.26	0.24	7.69
CS	0.61	0.34	0.17	3.73	0.29	0.31	5.45
AM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AZ	0.01	< 0.01	< 0.01	0.03	< 0.01	< 0.01	0.05
KZ	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01
GE	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.03
TR	0.03	0.01	0.01	0.24	0.02	0.02	0.33
LU	0.16	0.06	0.06	1.00	0.19	0.12	1.58
MC	0.04	0.01	< 0.01	0.12	0.02	0.02	0.20
NSR	348.4	106.9	66.4	800.1	107.2	118.9	1547.8
Total	534	195	114	1771	271	222	3107

BAS – the whole Baltic Sea basin

NSR – re-emission, natural and global sources

Table D6. Contributions of HELCOM countries and other countries within EMEP region to mercury depositions over the Baltic Sea catchments in 2002. Units: kg / year.

Country	GUB	GUF	GUR	BAP	BES	KAT	CAT
DK	15	16	11	80	42	71	235
EE	10	105	6	3	0.1	0.5	125
FI	68	77	2	2	0.1	0.5	150
DE	116	178	138	2226	137	78	2873
LT	2	9	14	4	0.1	0.2	29
LV	2	7	18	30	0.1	0.4	56
PL	92	165	144	5645	27	37	6110
RU	9	120	24	27	0.4	1.3	182
SE	92	22	7	54	2	30	206
HELCOM	406	699	362	8072	210	218	9966
AL	0.1	0.2	0.1	1.3	< 0.1	0.1	1.8
AT	1.9	3.1	1.6	18.2	0.4	0.7	25.8
BE	11	12	7	49	7	11	98
BG	3.4	2.4	1.0	16.9	0.4	2.0	26.1
BA	0.2	0.3	0.1	1.3	< 0.1	0.1	1.9
BY	1.9	6.5	9.0	60.6	0.1	0.5	78.6
CH	5.5	7.2	4.0	35.0	1.1	2.0	54.9
CY	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
CZ	8	14	11	336	3	3	375
ES	18	17	6	44	4	11	101
FR	23	24	13	90	11	20	181
GB	25	25	15	67	12	27	170
GR	2.0	2.1	0.7	19.7	0.6	1.5	26.6
HR	0.3	0.5	0.2	3.0	0.1	0.2	4.3
HU	5.8	9.8	4.9	78.4	1.2	2.5	102.6
IE	4.1	3.6	1.8	7.5	1.1	3.1	21.1
IS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
IT	6.4	7.9	2.6	30.1	1.2	2.6	50.9
MD	0.4	0.7	0.3	2.3	< 0.1	0.1	3.8
MK	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.2
NL	2.8	3.2	2.0	13.7	2.6	3.5	27.9
NO	33.4	8.6	3.0	10.7	0.4	15.1	71.1
PT	0.1	0.1	< 0.1	0.2	< 0.1	0.1	0.4
RO	7.6	12.5	5.6	57.0	0.9	3.6	87.2
SK	5	9	5	110	1	2	131
SI	0.5	0.7	0.3	4.1	0.1	0.2	5.9
UA	4.9	14.4	7.9	48.2	0.4	1.2	77.0
CS	2.9	4.0	1.5	22.0	0.4	1.4	32.4
AM	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
AZ	0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	0.3
KZ	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
GE	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	0.2
TR	0.2	0.3	0.1	1.1	< 0.1	0.1	1.8
LU	0.5	0.7	0.4	3.2	0.3	0.4	5.5
MC	0.1	0.1	< 0.1	0.3	< 0.1	< 0.1	0.6
NSR	1913	1555	560	2399	146	454	7028
Total	2495	2444	1026	11602	405	788	18759

CAT – the whole Baltic Sea catchment area

NSR – re-emission, natural and global sources

