

Annex C: Source allocation budgets for heavy metals

Table C1. Contributions of HELCOM countries and other countries within EMEP region to lead depositions to the Baltic Sea sub-basins in 2001. Units: tonnes / year

Country	GUB	GUF	GUR	BAP	BES	KAT	BAS
DK	0.04	0.01	0.01	0.42	0.31	0.30	1.1
EE	0.46	2.33	0.64	0.62	0.01	0.01	4.1
FI	2.31	0.79	0.10	0.54	0.01	0.01	3.8
DE	0.81	0.31	0.46	10.29	2.65	0.58	15.1
LT	0.08	0.05	0.14	0.45	0.00	0.00	0.7
LV	0.08	0.07	0.27	0.28	0.00	0.00	0.7
PL	1.03	0.57	0.95	14.58	0.34	0.24	17.7
RU	1.21	3.48	0.35	3.37	0.03	0.05	8.5
SE	0.48	0.06	0.06	1.19	0.07	0.14	2.0
HELCOM	6	8	3	32	3	1	54
AL	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01
AT	0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	0.1
BE	0.11	0.03	0.04	0.66	0.20	0.11	1.1
BG	0.02	0.01	0.01	0.03	< 0.01	< 0.01	0.1
BA	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
BY	0.08	0.07	0.06	0.21	< 0.01	< 0.01	0.4
CH	0.03	0.01	0.02	0.19	0.03	0.01	0.3
CY	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
CZ	0.04	0.03	0.04	0.39	0.02	0.01	0.5
ES	0.18	0.07	0.07	0.81	0.09	0.10	1.3
FR	0.10	0.03	0.03	0.48	0.11	0.07	0.8
GB	0.35	0.09	0.09	1.51	0.44	0.37	2.9
GR	0.04	0.05	0.03	0.07	< 0.01	< 0.01	0.2
HR	0.02	0.01	0.01	0.14	< 0.01	< 0.01	0.2
HU	0.02	0.01	0.01	0.11	< 0.01	< 0.01	0.2
IE	0.15	0.04	0.03	0.48	0.11	0.11	0.9
IS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
IT	0.17	0.11	0.11	1.15	0.09	0.04	1.7
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	0.07	0.02	0.02	0.49	0.21	0.10	0.9
NO	0.04	0.01	0.01	0.07	0.01	0.01	0.2
PT	0.08	0.03	0.03	0.34	0.03	0.04	0.6
RO	0.15	0.06	0.06	0.48	0.01	0.01	0.8
SK	0.04	0.02	0.03	0.23	0.01	< 0.01	0.3
SI	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.01	0.1
UA	0.17	0.13	0.10	0.33	0.01	0.01	0.7
CS	0.05	0.02	0.02	0.23	0.01	< 0.01	0.3
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	0.01
KZ	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
GE	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01
TR	0.04	0.06	0.02	0.04	< 0.01	< 0.01	0.2
LU	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01
MN	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NAT	15.9	6.0	4.2	40.1	4.5	4.3	75.0
Total	24	15	8	80	9	7	143

BAS – the whole Baltic Sea basin

NAT – re-emission and natural sources

Table C2. Contributions of HELCOM countries and other countries within EMEP region to lead depositions to the Baltic Sea catchments in 2001. Units: tonnes / year

Country	GUB	GUF	GUR	BAP	BES	KAT	CAT
DK	0.2	0.1	0.1	0.7	0.5	0.7	2
EE	1.6	14.9	4.2	1.1	0.01	0.1	22
FI	8.0	9.9	0.5	0.8	0.01	0.1	19
DE	3.4	3.9	2.7	46.4	5.4	2.2	64
LT	0.2	0.7	2.9	6.5	0.00	0.04	10
LV	0.2	1.4	2.9	0.9	0.00	0.02	6
PL	3.8	8.3	8.1	403.1	0.6	1.6	425
RU	8.7	79.3	13.1	15.8	0.05	0.6	118
SE	2.3	0.7	0.2	2.7	0.1	1.5	8
HELCOM	28	119	35	478	7	7	674
AL	0.01	0.02	0.01	0.1	< 0.01	< 0.01	0.1
AT	0.0	0.1	0.05	0.9	< 0.01	0.01	1.1
BE	0.5	0.4	0.2	1.6	0.3	0.4	3.4
BG	0.1	0.2	0.2	0.6	< 0.01	0.01	1.1
BA	< 0.01	< 0.01	< 0.01	0.1	< 0.01	< 0.01	0.1
BY	0.3	1.4	2.4	9.3	0.01	0.1	13.5
CH	0.1	0.1	0.1	1.2	0.05	0.1	1.7
CY	0.01	0.02	0.01	0.01	< 0.01	< 0.01	0.05
CZ	0.2	0.4	0.4	17.8	0.04	0.1	18.8
ES	0.7	0.8	0.4	4.2	0.1	0.3	6.6
FR	0.5	0.3	0.2	1.6	0.2	0.3	3.0
GB	1.5	0.9	0.5	3.6	0.6	1.2	8.3
GR	0.2	0.5	0.3	0.8	< 0.01	0.02	1.9
HR	0.1	0.2	0.2	3.9	0.01	0.02	4.5
HU	0.1	0.2	0.2	3.4	0.01	0.02	3.9
IE	0.7	0.4	0.2	1.1	0.2	0.4	3.0
IS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
IT	0.8	2.0	1.6	26.1	0.2	0.2	31.0
MD	0.01	0.04	0.04	0.2	< 0.01	< 0.01	0.3
MK	0.01	0.02	0.02	0.1	< 0.01	< 0.01	0.1
NL	0.3	0.2	0.1	1.2	0.3	0.3	2.4
NO	0.5	0.1	0.03	0.2	0.01	0.1	0.9
PT	0.3	0.3	0.1	1.1	0.05	0.1	2.0
RO	0.5	1.2	1.0	10.0	0.02	0.1	12.9
SK	0.1	0.4	0.3	12.0	0.01	0.04	12.9
SI	0.02	0.1	0.1	1.4	< 0.01	< 0.01	1.5
UA	0.9	2.0	2.0	11.5	0.01	0.1	16.5
CS	0.2	0.4	0.3	4.0	0.01	0.1	5.0
AM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AZ	0.01	0.03	0.01	0.02	< 0.01	< 0.01	0.1
KZ	0.02	0.03	0.01	0.02	< 0.01	< 0.01	0.1
GE	0.03	0.04	0.02	0.03	< 0.01	< 0.01	0.1
TR	0.3	0.6	0.3	0.4	< 0.01	0.02	1.7
LU	0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.04
MN	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
NAT	106	97	37	161	7	21	430
Total	144	230	83	757	16	32	1262

CAT – the whole Baltic Sea catchment area

NAT – re-emission and natural sources

Table C3. Contributions of HELCOM countries and other countries within EMEP region to cadmium depositions to the Baltic Sea sub-basins in 2001. Units: kg / year

Country	GUB	GUF	GUR	BAP	BES	KAT	BAS
DK	4.24	1.17	1.50	59.89	48.07	39.34	154
EE	7.08	103.39	4.26	5.23	0.08	0.10	120
FI	146.29	36.18	5.23	35.0	0.38	0.78	224
DE	21.34	7.15	13.77	337.62	57.38	14.48	452
LT	7.69	3.29	12.25	39.08	0.20	0.28	63
LV	6.72	3.63	26.44	22.30	0.11	0.12	59
PL	114.4	48.6	100.2	1756.9	38.6	29.0	2088
RU	36.90	64.90	13.86	134.98	1.03	1.67	253
SE	137.7	5.19	3.49	51.30	1.90	4.61	204
HELCOM	482	273	181	2442	148	90	3617
AL	0.03	0.02	0.01	0.09	0.01	< 0.01	0.2
AT	0.67	0.29	0.49	5.06	0.28	0.12	7
BE	1.57	0.40	0.57	11.43	3.90	2.60	20
BG	0.85	0.94	0.62	1.06	0.02	0.02	4
BA	0.03	0.01	0.01	0.17	0.01	< 0.01	0.2
BY	4.61	2.70	2.69	11.97	0.18	0.26	22
CH	0.42	0.13	0.20	3.26	0.45	0.19	5
CY	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
CZ	3.09	1.41	2.46	34.33	2.32	0.88	44
ES	4.68	1.61	1.94	29.43	3.56	4.94	46
FR	4.78	1.22	1.66	28.01	7.56	6.04	49
GB	6.17	1.62	1.69	30.28	10.06	8.73	59
GR	0.16	0.27	0.12	0.16	< 0.01	< 0.01	1
HR	0.11	0.05	0.07	0.76	0.04	0.01	1
HU	1.78	0.59	1.05	8.68	0.30	0.13	13
IE	2.23	0.56	0.52	7.44	1.75	1.87	14
IS	0.05	0.01	0.01	0.18	0.02	0.03	0.3
IT	1.36	1.05	0.89	7.94	0.67	0.36	12
MD	0.04	0.02	0.02	0.13	< 0.01	< 0.01	0.2
MK	0.11	0.09	0.06	0.22	0.01	< 0.01	0.5
NL	1.16	0.31	0.43	9.61	4.45	2.36	18
NO	7.39	1.38	1.09	15.57	0.96	2.08	28
PT	0.36	0.12	0.16	2.67	0.29	0.50	4
RO	9.98	2.64	3.49	33.92	0.88	0.51	51
SK	5.74	2.34	4.28	34.14	0.97	0.51	48
SI	0.14	0.08	0.12	1.20	0.05	0.02	2
UA	4.15	2.43	2.50	10.86	0.16	0.19	20
CS	0.98	0.32	0.33	4.63	0.23	0.08	7
AM	0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.04
AZ	0.02	0.02	0.01	0.03	< 0.01	< 0.01	0.1
KZ	0.04	0.01	0.01	0.06	< 0.01	< 0.01	0.1
GE	0.04	0.03	0.01	0.13	0.01	0.01	0.2
TR	0.89	1.40	0.45	0.62	0.02	0.03	3
LU	0.03	0.01	0.01	0.23	0.06	0.03	0.4
NAT	935	326	234	2272	241	233	4242
MN	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total	1481	624	443	5009	428	356	8341

BAS – the whole Baltic Sea basin

NAT – re-emission and natural sources

Table C4. Contributions of HELCOM countries and other countries within EMEP region to cadmium depositions to the Baltic Sea catchments in 2001. Units: kg / year

Country	GUB	GUF	GUR	BAP	BES	KAT	CAT
DK	14.7	11.0	6.9	79.5	65.6	84.4	262
EE	26.9	268.5	28.1	12.0	0.1	0.9	337
FI	371.2	424.3	24.7	40.3	0.6	5.0	866
DE	76.5	96.8	83.5	1707.5	116.1	58.1	2138
LT	20.8	51.5	181.3	610.5	0.4	3.7	868
LV	16.0	73.3	236.3	56.3	0.2	1.5	383
PL	355	674	774	35570	62	177	37611
RU	212	1955	366	796	2	18	3349
SE	276.1	69.4	15.0	100.1	3.5	51.2	515
HELCOM	1369	3624	1716	38972	250	400	46329
AL	0.16	0.39	0.30	1.80	0.01	0.04	2.7
AT	1.82	4.94	4.53	114.78	0.48	0.70	127.2
BE	7.44	5.69	3.70	28.32	5.74	7.17	58.1
BG	5.39	17.58	12.58	32.26	0.06	0.42	68.3
BA	0.11	0.21	0.19	3.91	0.01	0.04	4.5
BY	14.84	57.46	91.70	350.32	0.29	2.87	517.5
CH	1.63	1.93	1.23	20.20	0.71	0.88	26.6
CY	0.01	0.05	0.02	0.01	< 0.01	< 0.01	0.1
CZ	9.98	20.56	19.82	905.28	3.89	5.19	964.7
ES	16.49	18.59	10.97	120.26	5.02	12.28	183.6
FR	20.31	15.63	9.92	78.85	10.82	17.48	153.0
GB	21.74	15.18	9.49	68.14	13.90	23.56	152.0
GR	0.83	2.48	1.72	3.14	0.01	0.05	8.2
HR	0.40	1.10	1.10	26.74	0.07	0.16	29.6
HU	4.44	9.96	10.19	254.61	0.48	1.64	281.3
IE	7.38	4.88	2.85	16.62	2.43	5.41	39.6
IS	0.28	0.16	0.05	0.27	0.03	0.11	0.9
IT	5.76	16.19	13.27	255.31	1.21	1.53	293.3
MD	0.11	0.45	0.46	1.79	< 0.01	0.03	2.9
MK	0.64	1.90	1.39	4.79	0.02	0.09	8.8
NL	4.89	4.22	2.85	23.38	6.32	6.03	47.7
NO	41.64	14.28	5.31	28.76	1.45	28.79	120.2
PT	1.27	1.30	0.78	7.17	0.39	1.14	12.1
RO	25.14	47.40	44.99	588.18	1.43	9.15	716.3
SK	15.36	36.68	37.50	1603.94	1.57	5.53	1700.6
SI	0.47	1.89	1.92	57.76	0.10	0.15	62.3
UA	16.26	40.33	44.47	359.77	0.25	2.88	463.9
CS	3.42	5.96	4.74	73.52	0.41	1.50	89.5
AM	0.12	0.07	0.03	0.08	< 0.01	0.01	0.3
AZ	0.21	0.34	0.08	0.15	< 0.01	0.01	0.8
KZ	0.34	0.41	0.17	0.33	< 0.01	0.02	1.3
GE	0.54	0.65	0.22	0.47	0.02	0.07	2.0
TR	4.79	12.02	6.95	8.87	0.04	0.21	32.9
LU	0.16	0.10	0.07	0.55	0.08	0.11	1.1
NAT	5310	5186	1953	8398	356	1056	22259
MN	< 0.01	0.01	< 0.01	0.06	< 0.01	< 0.01	0.1
Total	6913	9171	4014	52411	663	1591	74762

CAT – the whole Baltic Sea catchment area

NAT – re-emission and natural sources

Table C5. Contributions of HELCOM countries and other countries within EMEP region to mercury depositions to the Baltic Sea sub-basins in 2001. Units: kg / year.

Country	GUB	GUF	GUR	BAP	BES	KAT	BAS
DK	2.8	0.6	1.0	72.7	104.3	82.1	264
EE	1.5	63.9	0.8	0.9	0.01	0.02	67
FI	19.8	7.5	0.4	3.1	0.02	0.03	31
DE	10.0	3.0	5.7	314.8	88.3	16.6	438
LT	1.0	0.5	2.0	9.8	0.04	0.1	13
LV	0.6	0.3	3.0	2.9	0.01	0.01	7
PL	11.6	5.2	11.4	254.6	8.8	6.4	298
RU	2.7	6.1	0.9	7.0	0.04	0.1	17
SE	10.3	0.6	0.7	18.7	1.4	3.4	35
HELCOM	60	88	26	685	203	109	1170
AL	0.01	0.01	< 0.01	0.04	< 0.01	< 0.01	0.06
AT	0.15	0.06	0.08	1.09	0.09	0.04	1.51
BE	0.51	0.14	0.16	2.94	1.12	0.56	5.43
BG	0.13	0.10	0.08	0.33	< 0.01	0.01	0.65
BA	0.01	< 0.01	< 0.01	0.05	< 0.01	< 0.01	0.07
BY	0.38	0.25	0.42	2.06	0.02	0.03	3.17
CH	0.16	0.07	0.09	1.01	0.14	0.07	1.55
CY	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
CZ	0.99	0.42	0.77	12.87	1.59	0.61	17.25
ES	0.80	0.32	0.33	4.12	1.34	0.50	7.41
FR	2.04	0.61	0.71	10.41	3.09	1.74	18.59
GB	2.88	0.69	0.73	12.37	4.96	3.74	25.37
GR	0.25	0.23	0.15	0.63	0.01	0.01	1.28
HR	0.02	0.01	0.01	0.13	0.01	< 0.01	0.18
HU	0.59	0.21	0.29	4.20	0.24	0.11	5.64
IE	0.66	0.18	0.19	2.31	0.58	0.52	4.44
IS	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
IT	0.22	0.14	0.14	1.38	0.10	0.06	2.04
MD	0.01	0.01	0.01	0.06	< 0.01	< 0.01	0.10
MK	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
NL	0.17	0.05	0.05	1.44	0.87	0.33	2.91
NO	2.01	0.32	0.27	4.02	0.40	1.04	8.07
PT	0.09	0.03	0.03	0.42	0.18	0.06	0.81
RO	0.53	0.21	0.22	2.60	0.08	0.06	3.69
SK	0.76	0.26	0.43	5.89	0.29	0.18	7.81
SI	0.03	0.01	0.02	0.19	0.01	< 0.01	0.26
UA	1.66	0.99	1.38	5.74	0.06	0.08	9.91
CS	0.15	0.06	0.06	0.92	0.05	0.02	1.26
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	< 0.01
KZ	0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.02
GE	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	0.01
TR	0.09	0.08	0.04	0.09	< 0.01	< 0.01	0.30
LU	0.05	0.01	0.02	0.30	0.09	0.04	0.51
NAT	492	174	118	949	90	85	1908
MN	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01	0.03
Total	567	267	150	1712	308	204	3208

BAS – the whole Baltic Sea basin

NAT – re-emission, natural and global sources

Table C6. Contributions of HELCOM countries and other countries within EMEP region to mercury depositions to the Baltic Sea catchments in 2001. Units: kg / year.

Country	GUB	GUF	GUR	BAP	BES	KAT	CAT
DK	9.8	6.5	4.6	88.0	156.3	171.0	436
EE	8.0	124.0	5.5	2.2	0.02	0.2	140
FI	55.5	66.9	1.8	2.3	0.03	0.3	127
DE	39.8	43.9	33.4	1463.7	180.0	54.9	1815
LT	3.2	7.6	56.2	138.4	0.1	0.6	206
LV	1.3	8.0	36.2	7.6	0.01	0.1	53
PL	38.9	69.8	74.2	8672.4	11.7	24.8	8892
RU	17.4	180.7	40.0	37.2	0.1	0.8	276
SE	33.3	4.8	2.0	42.6	2.5	23.8	109
HELCOM	207	512	254	10454	351	276	12054
AL	0.06	0.09	0.06	0.44	< 0.01	0.01	0.66
AT	0.51	1.10	0.88	25.59	0.13	0.16	28.38
BE	2.79	1.83	0.96	8.13	1.58	2.01	17.29
BG	0.86	1.60	1.19	3.72	0.01	0.10	7.49
BA	0.04	0.07	0.04	0.93	< 0.01	0.01	1.10
BY	1.33	5.14	10.13	92.29	0.03	0.24	109.15
CH	0.91	1.06	0.59	7.48	0.22	0.44	10.71
CY	0.01	0.02	0.01	0.02	< 0.01	< 0.01	0.06
CZ	3.48	6.47	5.63	580.65	2.29	2.45	600.96
ES	3.98	4.36	2.35	22.71	1.66	1.53	36.58
FR	10.42	7.60	4.16	35.91	4.30	6.50	68.88
GB	13.90	7.29	3.90	31.55	6.98	10.11	73.73
GR	1.55	2.91	2.06	6.00	0.02	0.16	12.70
HR	0.09	0.18	0.13	3.12	0.01	0.02	3.56
HU	2.05	4.13	3.47	124.96	0.32	0.70	135.63
IE	3.64	1.94	0.96	6.03	0.79	1.64	15.01
IS	0.04	0.01	< 0.01	0.02	< 0.01	< 0.01	0.08
IT	1.41	2.71	1.81	25.87	0.18	0.29	32.26
MD	0.07	0.19	0.16	0.75	< 0.01	0.01	1.19
MK	0.01	0.01	0.01	0.04	< 0.01	< 0.01	0.06
NL	0.81	0.59	0.34	3.94	1.19	0.98	7.84
NO	17.21	2.98	1.09	7.68	0.55	12.53	42.05
PT	0.43	0.39	0.21	1.64	0.21	0.18	3.05
RO	2.15	3.85	2.85	37.01	0.11	0.52	46.48
SK	2.43	4.89	4.43	268.50	0.37	0.90	281.52
SI	0.13	0.31	0.24	5.94	0.01	0.02	6.65
UA	8.28	16.45	17.33	263.28	0.08	0.93	306.37
CS	0.78	1.02	0.65	13.01	0.08	0.21	15.75
AM	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
AZ	0.01	0.02	0.01	0.02	< 0.01	< 0.01	0.06
KZ	0.04	0.05	0.02	0.03	< 0.01	< 0.01	0.15
GE	0.03	0.04	0.02	0.02	< 0.01	< 0.01	0.11
TR	0.58	0.92	0.62	0.90	< 0.01	0.04	3.07
LU	0.30	0.22	0.10	0.94	0.13	0.20	1.89
NAT	5770	3069	1034	4530	134	477	15015
MN	0.02	0.03	0.02	0.24	< 0.01	< 0.01	0.32
Total	6058	3662	1355	16564	506	796	28940

CAT – the whole Baltic Sea catchment area

NAT – re-emission, natural and global sources