

EXECUTIVE SUMMARY

INTRODUCTION

1. EMISSIONS OF HEAVY METALS AND POPs

1.1. Official emission data for 2017

1.1.1. Reporting of emission inventories in 2019

1.1.2. Emission Trends in the EMEP area – reported data

1.1.3. Comparison of 2016 data reported in 2018 and in 2019

1.1.4. Data sets for modelers in 2019

1.2. Emissions data for modelling

2. MEASUREMENTS OF HEAVY METALS AND POPs

2.1. EMEP measurements in 2017

2.1.1. Monitoring of POPs in 2017

2.1.2. Monitoring of heavy metals in 2017

2.2. Supplementary measurements

3. STATUS OF HEAVY METALS AND POP AIR POLLUTION IN 2017

3.1. Meteorological conditions of 2017

3.2. Model assessment of pollution levels

3.2.1. Model setup

3.2.2. Lead and cadmium

3.2.3. Mercury

3.2.4. PAHs

3.2.5. HCB, PCDD/Fs and PCBs

3.2.6. Country-specific information

3.3. Additional information products

3.3.1. Ecosystem-specific deposition

3.3.2. Heavy metal and POP deposition to watersheds

3.3.3. Air pollution by PAHs: exceedances of air quality standards

3.3.4. Atmospheric loads to the marginal seas

3.3.5. Pollution of the Arctic

3.3.6. Global scale pollution by heavy metals and POPs

4. RESEARCH ACTIVITIES

4.1. Country-scale pollution assessment

4.1.1. B(a)P pollution at regional and national scales

4.1.2. Heavy metal pollution in Germany

4.2. Model evaluation of Hg atmospheric chemistry: Photo-reduction of gaseous oxidized mercury

4.3. Model assessment of POP and Hg multi-media dispersion

4.3.1. Overview of GLEMOS multi-media approach

4.3.2. Refinement of HCB pollution assessment

4.3.3. Development of Hg multi-media modelling

4.4. Analysis of factors affecting heavy metal pollution changes between 2016 and 2017

4.5 Analysis of key emission sources and trends of B(a)P pollution in the EMEP countries

5. COOPERATION

5.1. Subsidiary bodies of the Convention

5.1.1. Task Force on Measurements and Modelling

5.1.2. Task Force on Techno-Economical Issues

5.2. International organizations

5.2.1. Arctic Monitoring and Assessment Programme

5.2.2. Helsinki Commission

5.2.3. UN Environment and Minamata Convention

5.2.4. Stockholm Convention

6. MAIN CHALLENGES AND DIRECTIONS OF FUTURE RESEARCH

REFERENCES

APPENDIX A1. Reporting of EECCA countries

APPENDIX A2. Emission changes between 2016 (reported in 2018) and 2017 (reported in 2019) over $\pm 15\%$ (data sets used for gridding)

APPENDIX A3. Overview of gap-filling in 2019