

INTRODUCTION

Assessment of transboundary pollution of Parties to the Convention on Long-Range Transboundary Air Pollution (CLRTAP) is among the priority activities performed within the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP). The assessment is carried out on a regular base using chemical transport models with essential support by background observations carried out at sites of the EMEP monitoring network.

A variety of information generated and provided for countries includes maps of pollutants air concentration and deposition, source apportionment, ecosystem-specific deposition etc. Nevertheless, the currently produced information on pollution levels in a country can be significantly extended by assessment performed on a country scale that involves variety of national data. A particular benefit of such assessment is achieved by close co-operation with national experts. In order to reveal peculiarities and challenges of the national scale analysis and to demonstrate its added value, a number of country specific case studies have been conducted by Meteorological Synthesizing Centre – East (MSC-E) with support by the Task Force on Measurement and Modelling (TFMM).

In the framework of the studies various aspects of contamination of selected EMEP countries by heavy metals and persistent organic pollutants (POPs) are investigated. A number of countries located in different parts of Europe and characterized by different climatic and economical conditions (the Czech Republic, Croatia, the Netherlands, the UK, Spain, Poland, and Belarus) have been participating in the study. The analysis is based on detailed information on emissions and measurement data provided by national experts. In addition to the regular information generated within EMEP the countries receive detailed data on pollution levels with fine spatial resolution, source apportionment of pollution on a scale of individual provinces of the countries, contribution of various emission sectors and large point sources etc. Additional outputs of the analysis are improvement of the modelling tools used for operational assessment within EMEP and evaluation of national emissions data based on comparison of measurement data and modelling results.

The current report summarizes the major finding of the country-scale studies gained during the whole period of the project. More detailed information on the topic can be found in a series of country-specific reports as well as regular EMEP Status Reports [*Ilyin et al.*, 2011; *Ilyin et al.*, 2012; *Ilyin et al.*, 2014; *Ilyin et al.*, 2016a; *Ilyin et al.*, 2016b; *Gusev et al.*, 2016; *Gusev et al.*, 2017; *Ilyin et al.*, 2018].