



Economic and Social Council

Distr.: General
31 August 2016

English only

Economic Commission for Europe

Executive Body for the Convention on Long-range
Transboundary Air Pollution

**Steering Body to the Cooperative Programme for
Monitoring and Evaluation of the Long-range
Transmission of Air Pollutants in Europe**

Working Group on Effects

Second joint session*

Geneva, 13–16 September 2016

Item 14 of the provisional agenda

**Progress in activities in 2016 and further development
of effects-oriented activities**

Modelling and mapping**

**Report by the Coordination Centre for Effects and the Task
Force on Modelling and Mapping**

Summary

The present report is being submitted for consideration by the second joint session of the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe and the Working Group on Effects in accordance with the request of the Executive Body for the Convention on Long-range Transboundary Air Pollution in the 2016–2017 workplan for the implementation of the Convention (ECE/EB.AIR/133/Add.2, items 1.1.1.15, 1.1.1.16, 1.1.3.3, 1.3.1,

* The Executive Body to the Convention agreed that, as of 2015, the Working Group on Effects and the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe should meet jointly, to achieve enhanced integration and cooperation between the Convention's two scientific subsidiary bodies (ECE/EB.AIR/122, para. 47 (b)).

** The present document is being issued without formal editing.



1.4.1, 1.4.2, and 1.5.2), the informal document approved by the Executive Body for the Convention at its thirty-fourth session, “Basic and multi-year activities in the 2016–2017 period” (items 1.1.1–1.1.3, 1.1.5–1.1.7, 1.2.1, 1.2.2, 1.5.1 and 1.8.1–1.8.3) and the Long-term Strategy for the Convention (ECE/EB.AIR/106/Add.1, decision 2010/18, annex).

The present report includes a review of the workplan and a summary of the discussion and conclusions reached at the back-to-back meeting of the thirty-second Task Force of the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends and the twenty-sixth workshop of the Coordination Centre for Effects (Dessau, Germany, 19–22 April 2016). The meetings focused on progress achieved in modelling and mapping, inter alia, regarding methods and objectives for assessing air pollution effects on plant species diversity, and on the update of the Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends. The meetings included a training session addressing modelling methods and input requirements for use by Parties under the Convention to enable the continuation of contributions to European databases on critical loads and air pollution effects, for incorporation in integrated assessment modelling.

Contents

	<i>Page</i>
I. Introduction	4
II. Progress in the modelling and mapping activities	4
III. Workplan items relevant to the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risk and Trends.....	5
A. Monitoring and Modelling Tools (2016–2017 workplan item 1.1.1)	5
B. Regarding 2016–2017 workplan item 1.1.1.15.....	6
C. Regarding 2016–2017 workplan item 1.1.1.16.....	7
D. Integrated Assessment tools (2016–2017 workplan item 1.1.3).....	7
E. Cooperation with other projects and bodies (outreach activities; 2016–2017 workplan item 1.3).....	7
F. Improving the functioning of the Working Group on Effects and EMEP and their subsidiary bodies (2016–2017 workpan item 1.4)	8
G. Science policy assessment (2016–2017 workplan item 1.5).....	8
IV. Recommendations and other outcomes of the thirty-second meeting of the Task Force of ICP Modelling and Mapping (Dessau, Germany, 19–22 April 2016)	9

I. Introduction

1. France is the lead country of the Task Force of the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends (ICP Modelling and Mapping).¹ The Netherlands is the lead country of the programme centre of ICP Modelling and Mapping, the Coordination Centre for Effects (CCE).² The Task Force is hosted by the French National Competence Centre for Industrial Safety and Environmental Protection (INERIS).³ The CCE is hosted at the Dutch National Institute for Public Health and the Environment (RIVM).⁴ Representatives of more than 30 Parties to the Convention participate in the activities of ICP Modelling and Mapping. National Focal Centres (NFCs) of ICP Modelling and Mapping contribute to methods and data to help compile and maintain the CCE European database of critical loads for acidification and eutrophication. NFCs also research novel thresholds for impacts on plant species diversity. ICP Modelling and Mapping results are also used in the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) Task Force on integrated assessment modelling (TFIAM) in collaboration with the Meteorological Synthesizing Centre-West (MSC-W), the Meteorological Synthesizing Centre-East (MSC-E) and the Centre for Integrated Assessment Modelling. ICP Modelling and Mapping collaborates with all the International Cooperative Programmes (ICPs) under the Convention and the Joint Task Force on the Health Aspects of Air Pollution.⁵

II. Progress in the modelling and mapping activities

2. The thirty-second meeting of the ICP Modelling and Mapping Task Force and the twenty-sixth CCE workshop were hosted by the German Environment Agency (UBA) and held back to back (Dessau, Germany, 19–22 April 2016).⁶

3. Sixty three delegates from the following 20 countries participated in the meeting: Austria, Belgium, Canada, China, Croatia, Czech Republic, Denmark, France, Germany, Iceland, Italy, the Netherlands Norway, Poland, Russian Federation, Serbia, Spain, Sweden, Switzerland, the United Kingdom of Great Britain and Northern Ireland and the United States of America. Representatives of the ICP on Effects of Air Pollution on Natural Vegetation and Crops (ICP Vegetation), the ICP on Assessment and Monitoring of the Effects of Air Pollution on Rivers and Lakes (ICP Waters), the Joint Expert Group on Dynamic Modelling (JEG) and CCE were represented. In 2016, lack of funding from the lead countries and from workplan-related funds prevented a number of representatives of countries in Eastern Europe, the Caucasus and Central Asia from attending the meeting and the workshop.

¹ See www.icpmapping.org.

² See www.wge-cce.org.

³ See www.ineris.fr.

⁴ See www.rivm.nl.

⁵ The Task Force is a joint body of the World Health Organization (WHO)/European Centre for Environment and Health (ECEH) and the Executive Body for the Convention.

⁶ Ms. Le Gall and Mr. Hettelingh (2016) Draft minutes of the 26th CCE Workshop and the 32nd meeting of the Programme Task Force of the ICP Modelling and Mapping in Dessau, Germany, 19–22 April 2016 available at <http://icpmapping.org/>.

4. Decisions by the ICP Modelling and Mapping Task Force were reviewed by the participants during the meeting. Presentations and posters were made available on the ICP Modelling and Mapping website. On behalf of Ms. Lilian Busse, director of Division II (*Environmental Health and Protection of Ecosystems*), Ms. Simone Richter, head of Department of the German Environment Agency (UBA), welcomed the participants to the meeting.

5. The objectives of the meetings included:

(a) Latest findings in field and laboratory experiments and through model assessments (VSD-PROPS; VEG; BERN,...) of (air pollution) impacts on plant species diversity;

(b) NFC-progress in response to the Call for data 2015–2017;⁷

(c) Discussions (“training”) on practical issues regarding the modelling of plant species diversity in the context of the call for data;

(d) Integrated assessment reports and studies on critical load exceedance or effects on biodiversity in natural areas caused by changes in (agriculture) emissions on specified spatial and temporal scales;

(e) Review of the Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends (Mapping Manual);

(f) Consideration of the ICP Modelling and Mapping relevant items of the 2016–2017 workplan for the implementation of the Convention (ECE/EB.AIR/133/Add.2), the 2014–2015 workplan, the Long-term Strategy for the Convention and the the Action Plan for the Implementation of the Long-term Strategy for the Convention (ECE/EB.AIR.109/Add.1, decision 2011/14, annex);

(g) Consideration of other Task Force issues including reporting requirements to the second joint session of EMEP Steering Body and the Working Group on Effects.

III. Workplan items relevant to the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends

A. Monitoring and Modelling Tools (2016–2017 workplan item 1.1.1)

6. Mr. Hettelingh (CCE Head) informed the meeting participants that the financial support for the CCE contribution to the Convention workplan for 2016–2017 was uncertain. Further information would be available later in 2016. Mr. Hettelingh insisted that it was important that the tasks carried out by the ICP Modelling and Mapping network would be continued, in particular, with respect to the adopted call for data 2015–2017. Ms. Le Gall

⁷ See http://wge-cce.org/Activities/Call_for_Data.

highlighted the essential role of the CCE as coordinator of that scientific network.

7. The Task force expressed its concern over the financial situation of several NFCs as well as of the CCE. The realisation of the workplan items above is strongly dependant on the funding situation of the CCE. They may not be completed if CCE financing situation (funding by Parties and from the trust fund) is not consolidated in the coming months. The RIVM has proposed to prioritize CCE activities on the 2015–2017 call for data.

B. Regarding 2016–2017 workplan item 1.1.1.15

8. The objective of the call for data 2015–2017 was reiterated, to derive nitrogen and sulphur critical load functions taking into account their impact on biodiversity as well as an opportunity for NFCs to update acidification and eutrophication critical loads.

9. Different model chains were presented, using different indicators leading to the Habitat Suitability Index. All converged towards the critical loads functions that were similarly built (with node points of maximum and minimum critical loads for sulphur and nitrogen: CLSmax, CLNmin and CLNmax) as recommended by CCE.

10. The presentation of intermediate results of the call for data 2015–2017 highlighted progresses and a number of difficulties or uncertainties. Discussions were useful in the sense that knowledge and application experiences regarding (indicators for and modelling of) the change of biodiversity were shared and taken note of in lively debates. Altogether, the session enabled progress towards a common indicator in which confidence of the ICP Modelling and Mapping is likely to increase as methodological consensus further develops.

11. This should provide NFCs with the information necessary to advise national policy on the quality of the biodiversity indicator that may become increasingly policy relevant on a European (Convention; European Union) scale.

12. Different countries demonstrated that a variety of model chains, based on a similar logic, are available to assess N effects on biodiversity using suitable indicators (such as the Habitat Suitability Index, the Habitat Quality Index and the critical load (function) for biodiversity). The critical load function for biodiversity, was a common output of several of these model chains, potentially ensuring cross-border compatibility.

13. The following 16 countries indicated that they intended to respond to the call for data 2015–2017 either in updating their acidification and eutrophication database or/and in providing their contribution to the biodiversity critical load and the Habitat Suitability Index: Austria, Belgium (Wallonia), Croatia, Denmark, France, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Russian Federation, Serbia, Sweden, Switzerland and the United Kingdom.

C. Regarding 2016–2017 workplan item 1.1.1.16

14. The update of the Mapping Manual was reviewed. With the exception of the proposal on weathering, all texts were reviewed by the Task Force. All modifications proposed by the experts were accepted by the Task Force. The proposal on weathering was circulated to the Task Force members. It would be considered accepted if no major modifications or remarks would be sent to the ICP Modelling and Mapping Chair by 23 May 2016. All accepted texts (see the minutes of the thirty-second Modelling and Mapping Task Force meeting)⁸ would be integrated in Chapter 5 of the Mapping Manual. The revised version of Chapter 5 would then be submitted — for formal approval — to the second joint session of the EMEP Steering Body and the Working Group on Effects.

15. The procedure to update the Mapping Manual has therefore been completed compared the procedure adopted in 2015 as follows, noting that if no consensus is reached within the ICP Modelling and Mapping Task Force on the text proposed by an expert or an NFC as an update, two options shall be considered: (a) there is consensus that the Mapping Manual should remain unchanged (the proposal is rejected); (b) new text is added between square brackets. These options apply until new evidence is brought in and agreement is reached (if required, at dedicated workshops). Parties remain free to carry out the calculation as they feel suitable. They will document the specificities of their calculation when their report their results to the CCE.

D. Integrated Assessment tools (2016–2017 workplan item 1.1.3)

16. The European critical load database adopted at the first joint session of the EMEP Steering Body and the Working group on Effects (Geneva, 14–18 September 2015) would be implemented in the summer of 2016 in collaboration with EMEP Centre for Integrated Assessment Modelling.

E. Cooperation with other projects and bodies (outreach activities; 2016–2017 workplan item 1.3)

17. The CCE participated in the joint workshop between the Arctic Monitoring and Assessment Programme and Convention bodies (Potsdam, Germany, 16 February 2016) and in the meeting of the Task Force on Hemispheric Transport of Air Pollution (Potsdam, Germany, 17–19 February 2016).

18. In past years, representatives of several countries of Eastern Europe, the Caucasus and Central Asia had been invited to and participated at the meetings of the ICP Modelling and Mapping Task Force and at (held back to back) CCE workshops and training sessions of information.

⁸ See www.icpmapping.org.

19. In 2014–2016, a lack of funding prevented a number of country representatives from Eastern Europe, the Caucasus and Central Asia from travelling to and participating in the CCE workshops and Task Force meetings.

F. Improving the functioning of the Working Group on Effects and EMEP and of their subsidiary bodies (2016–2017 workplan item 1.4)

20. The CCE participated in the joint Task Force meeting of the ICP Waters and the ICP on Integrated Monitoring of Air Pollution Effects on Ecosystems (Integrated Monitoring) (Asker, Norway, 24–26 May 2016) and presented the progress of ICP Modelling and Mapping.

G. Science policy assessment (2016–2017 workplan item 1.5)

21. The CCE conducted analysis on European areas at risk of excess nitrogen and biodiversity loss for inclusion in the Convention’s “Towards Cleaner Air Scientific Assessment Report 2016”.

IV. Recommendations and other outcomes of the thirty-second meeting of the Task Force

22. The CCE Status Report 2015⁹ was published, including an analysis of the 2015 European critical loads database and exceedances in comparison with the previous database.

23. In response to the call for data, all NFCs should submit their national data even if these have not changed since the last submission. For countries that do not submit data, CCE will use critical loads from the European background database for future European maps and scenario analysis.

24. Future documentation of European scenario-specific exceedances is to be completed with a table reflecting the national emissions related to these scenarios.

25. In the future, the chapters of CCE reports in which national data are to be used, will be circulated for review to the NFCs.

26. A workshop may be organized between experts to update the Mapping Manual on the calculation or the parameterization of nitrogen immobilization in soils within the next two years.

27. In response to a request from the NFCs made during the NFC training session, CCE and the Alterra Institute at Wageningen, the Netherlands, agreed to conduct an in-kind project (due to the lack of financial means of CCE) to provide software to NFCs in the summer of 2016, enabling them to

⁹ See www.wge-cce.org.

compute critical load functions for biodiversity on a regional scale (i.e., multiple sites/habitats).

28. In view of the uncertainty regarding CCE funding, it is recommended that the deadline for the response to the call for data be (provisionally) set for the end of January 2017.
