

Decision 2019/20

Revised mandate for the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends

Recalling the relevant provisions of articles 7 and 8 of the Convention on Long-range Transboundary Air Pollution,

Recalling also its decision 1999/2 concerning the structure and organization of work,

Recalling further the terms of reference for the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends (EB.AIR/WG.1/2000/4, annex VII), noted at its eighteenth session (ECE/EB.AIR/71, para. 58 (c)),

Recalling its decision 2002/1 on the financing of core activities, as amended by decision 2018/8,

Noting the long-term strategy for the effects-oriented activities (ECE/EB.AIR/2009/17), adopted at its twenty-eighth session (ECE/EB.AIR/99, para. 25 (b)),

Further noting the Guidelines for reporting on the monitoring and modelling of air pollution effects (ECE/EB.AIR/2008/11, ECE/EB.AIR/WG.1/2008/16/Rev.),

Acknowledging the achievements of the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends and the Joint Expert Group on Dynamic Modelling, including:

(a) Development and maintenance of critical levels and loads methodologies and databases to assess the risk to ecosystems of acidification, eutrophication and heavy metals. The approach has been extended to include dynamic modelling methodologies to enable the simulation and evaluation of the temporal development of these risks to future policy target years;

(b) Exploration of methodologies for the development of critical loads for biodiversity to assess the impact of nitrogen and sulphur deposition on endpoints for biodiversity in general and on the occurrence of plant species in particular;

(c) Compilation, by the Coordination Centre for Effects, of national critical loads data submitted by national focal centres, into a database of critical loads for acidification, eutrophication and biodiversity, applying gap-filling methods and compiling background information for European Parties that do not provide their national critical loads data; data from Canada and the United States of America were collected and compiled by the Coordination Centre for Effects to complete the geographic coverage of the United Nations Economic Commission for Europe region;

(d) Development of methodologies to include dynamics of ecosystem response to air pollution, including biodiversity, time lags and interactions with climate change and land use change;

(e) Development of modelling and mapping methodologies and guidance, which are documented in Coordination Centre for Effects reports, publications in the scientific literature and formal documents submitted under the Convention to the annual joint sessions of 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;

(f) Publication and update of the *Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends*,¹ describing modelling and mapping methodologies. The Manual provides a

¹ Most recent version available at http://icpmapping.org/Latest_update_Mapping_Manual.

description of harmonized indicators to establish critical levels and loads and methods to assess the impacts of acidification, eutrophication, heavy metals, ozone and particulate matter on terrestrial and aquatic ecosystems, crops or building materials. It has been updated in collaboration with the International Cooperative Programme on Effects of Air Pollution on Natural Vegetation and Crops and the International Cooperative Programme on Effects of Air Pollution on Materials, including Historic and Cultural Monuments;

(g) Identification of United Nations Economic Commission for Europe regional and national areas with critical load exceedance and assessment of the magnitude of these exceedances, in collaboration with the Centre for Integrated Assessment Modelling, the Meteorological Synthesizing Centre-East and the Meteorological Synthesizing Centre-West;

(h) Assisting the Working Group on Effects, the Working Group on Strategies and Review and the Task Force on Integrated Assessment Modelling by providing scientific advice regarding the use and interpretation of data and modelling methodologies for critical levels and loads, exceedance maps with comprehensive information on air pollution effects on ecosystems for interpretation of policy effectiveness, for use in cost-benefit analysis; ecosystem response over time and future scenarios;

(i) Making available the data produced under the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends according to decision 2006/1 on data availability under the Convention (ECE/EB.AIR/89/Add.1).

Recognizing the need to update the Programme's mandate to ensure its consistency with the provisions of the amended Protocols to the Convention and its strategic priorities, as set out in the following documents:

(a) The revised long-term strategy for the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/142/Add.2);

(b) The 2016 scientific assessment of the Convention;²

(c) The policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3 and Corr.1 and ECE/EB.AIR/2017/4).

Noting the recommendation of the Working Group on Effects to transform the Joint Expert Group on Dynamic Modelling into a programme centre under the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends as of 1 January 2020,

Noting with appreciation the hosting of the Coordinating Centre for Effects by the German Environment Agency in Dessau, Germany, and the ongoing leadership of the Task Force by France and the offer by the Swedish Environmental Research Institute in Stockholm to host the Centre for Dynamic Modelling,

1. *Adopts* the Programme's revised mandate as contained in the annex to the present decision, which includes the key objectives and functions of the Programme Task Force and the Programme Centres to be carried out on an ongoing basis, whereas additional activities and specific tasks and associated deliverables to be carried out in a shorter time frame will be included in the biennial workplans for the implementation of the Convention;

2. *Decides* that:

(a) The Programme Centres, in cooperation with the Chair of the Task Force, are responsible for the detailed planning, coordination and evaluation of the Programme;

(b) The lead country or countries are responsible for leading and coordinating the Task Force's ongoing work and tasks, organizing its meetings, communicating with participating experts and other organizational arrangements, in accordance with the biennial

² See Rob Maas and Peringe Grennfelt, eds., *Towards Cleaner Air: Scientific Assessment Report 2016* (Oslo, 2016) and United States Environmental Protection Agency and Environment and Climate Change Canada, *Towards Cleaner Air: Scientific Assessment Report 2016 – North America* (2016).

workplan. Chairs of the Task Force are appointed by the lead country or countries to carry out these tasks;

(c) In the event that a lead country needs to discontinue its leadership role, it is encouraged to notify the secretariat, Co-Chairs, and other lead countries as soon as possible, but preferably no later than one year prior to the time it will need to cease its leadership activities. The withdrawing lead country will make every effort to ensure a smooth transition to the next leadership model, by ensuring that all data and any other information required for Task Force operations are provided to the appropriate country or person(s);

(d) The Programme Centres and the Chair of the Programme Task Force are responsible for carrying out the work assigned to them in the biennial workplans approved by the Executive Body, reporting thereon and keeping other relevant bodies apprised of their work.

Annex

Revised mandate for the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends

1. The International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends will continue to provide the Working Group on Effects and the Executive Body and other subsidiary bodies with comprehensive information on: critical levels and loads and their exceedances for selected pollutants; the development and application of other methods for effects-based approaches; and the modelling and mapping of the present status and trends in impacts of air pollution.

2. The Programme Centres and the Chair of the Task Force report on their activities and deliverables to the Working Group on Effects.

3. The common functions of the Programme Task Force, the Coordinating Centre for Effects and the Centre for Dynamic Modelling are to:

(a) Collaborate with and provide guidance to national focal centres with comprehensive information on the following:

(i) Critical levels and loads and the risk of exceedances for selected pollutants and effects on appropriate endpoints of the natural environment;

(ii) The modelling and mapping of the present status and trends of impacts of air pollution on terrestrial and aquatic ecosystems for the United Nations Economic Commission for Europe region.

(b) Organize annual meetings and workshops, as appropriate, to share knowledge on critical loads and modelling methodologies addressing the risk of impacts on terrestrial and aquatic ecosystems with all Parties, particularly with the Parties in Eastern Europe, the Caucasus and Central Asia;

(c) Carry out tasks adopted in the science-related part of the workplan of the Convention established by the Working Group on Effects and the Executive Body, provided that sufficient funding is available;

(d) Support the Working Group on Effects, the Working Group on Strategies and Review and the Task Force on Integrated Assessment Modelling with scientific advice regarding the use and interpretation of data and modelling methodologies for critical levels and loads;

(e) Collaborate with other international cooperative programmes to develop understanding and dose-response relationships for terrestrial and aquatic ecosystems, promote participation of all Parties and relevant long-range transport of atmospheric pollutants Convention bodies and seek ways in which collectively gathered knowledge and information can be used in the common framework of dynamic models;

(f) Collaborate with the Centre for Integrated Assessment Modelling and the Task Force on Integrated Assessment Modelling in elaborating and assessing pollution scenarios, and with the Meteorological Synthesizing Centre-East and the Meteorological

Synthesizing Centre-West of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe to compile deposition maps to enable the calculation of critical loads and their exceedances;

- (g) Carry out development and application of methods for effect-based approaches, including:
 - (i) Understanding of timescales and time lags of responses to changes in air pollution;
 - (ii) Designs for development of dynamic models describing the response over time;
 - (iii) The modelling of impacts on suitable indicators of biodiversity and of possible impacts on selected ecosystem services in collaboration with other Working Group on Effects bodies.
 - (h) Facilitate and be an entry point for cooperation between:
 - (i) The Convention and non-Convention research groups and organizations, to increase visibility and widen use of results of modelling critical loads and their exceedance achieved by the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends in a cost-effective way. Collaboration with partners outside the Convention includes, in particular, the Arctic Monitoring and Assessment Programme, the United Nations Environment Programme, the Convention on Biological Diversity and the European Union;
 - (ii) The Working Group on Effects and research groups and networks such as the Long-term Ecosystem Research Network and LifeWatch active in development and application of dynamic models of air pollution effects, climate change and land use outside the Working Group on Effects.
 - (i) Carry out other tasks assigned to them by the Working Group on Effects and the Executive Body.
4. The functions of the Programme Task Force are to:
- (a) Plan, organize and evaluate the Programme's activities; review and assess methodologies and databases on critical levels and loads, and their exceedances and (trends of) the risk of impacts on suitable indicators for terrestrial and aquatic ecosystems' health;
 - (b) Document modelling and mapping methodologies in the *Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends*;³
 - (c) Make recommendations regarding further development of effect-based approaches and future modelling and mapping requirements.
5. The functions of the Coordinating Centre for Effects are to:
- (a) Develop and implement databases for calculation of critical loads, their exceedances and their mapping at United Nations Economic Commission for Europe scale under the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends and provide technical advice regarding use and interpretation of critical loads and exceedances;
 - (b) Implement established knowledge on effects of major air pollutants on the natural environment in modelling methodologies, including information exchanges with other Convention and Research Groups on available dose-response relationships assessed in order to protect ecosystems;

³ Most recent version available at http://icpmapping.org/Latest_update_Mapping_Manual.

(c) Support the development of dynamic models describing the response over time of suitable indicators for biodiversity, in collaboration with other international cooperative programmes and the Centre for Dynamic Modelling;

(d) Apply methods for effect-based approaches, including dynamic modelling and the modelling of impacts on suitable indicators of biodiversity;

(e) Conduct periodic training sessions and workshops to assist national focal centres in their work;

(f) Maintain and update relevant databases and serve as a clearing house for data collection and exchanges regarding critical levels and loads among Parties and bodies under the Convention;

(g) Produce information and data necessary for implementation of the Convention and its Protocols in relation to indicators for natural ecosystems' health, including critical loads and their exceedances.

6. The functions of the Centre for Dynamic Modelling are to:

(a) Develop and promote methods focusing on dynamic modelling to complement ecosystem effect assessment work in collaboration with all Working Group on Effects bodies;

(b) Develop, test and elaborate suitable indicators of biodiversity using dynamic models that can be utilized for calculating critical loads, in close collaboration with the Coordination Centre for Effects, the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends Task Force and other international cooperative programmes;

(c) Identify gaps in ecosystem effect modelling under the Working Group on Effects, and propose areas where additional effort would be beneficial;

(d) Carry out the development and maintenance of the common Working Group on Effects website, with the aim of providing common access to the work of the Working Group on Effects from one entry point;

(e) Facilitate cooperation between the Working Group on Effects and non-Convention research groups and organizations to increase visibility and widen use of results achieved by the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends specifically and other international cooperative programmes in general, in a cost-effective way;

(f) Promote participation of all Parties and relevant Convention bodies and seek ways in which collectively gathered knowledge and information can be used in the common framework of dynamic models;

(g) Provide links between long-term monitoring and dynamic model development groups within the Convention.