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**ECONOMIC COMMISSION FOR EUROPE**

**EXECUTIVE BODY FOR THE CONVENTION ON LONG-RANGE  
TRANSBOUNDARY AIR POLLUTION**

Twenty-fourth session  
Geneva, 11-14 December 2006  
Item 3 of the provisional agenda

Working Group on Effects

Twenty-fifth session  
Geneva, 30 August – 1 September 2006  
Item 6 of the provisional agenda

**REVISED DRAFT 2007 WORKPLAN FOR EFFECTS-ORIENTED ACTIVITIES<sup>1</sup>**

Note by the Bureau of the Working Group on Effects in collaboration with the secretariat

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<sup>1</sup> This document was revised by the Working Group on Effects at its twenty-fifth session for submission to the twenty-fourth session of the Executive Body

## INTRODUCTION

1. The Executive Body, at its twenty-third session, agreed that the new procedures for the workplan had worked well and requested that the same procedures be used in 2006 (ECE/EB.AIR/87, para. 85). At its meeting, held in Geneva from 1 to 3 March 2006, the Extended Bureau of the Working Group on Effects, comprising the Bureau of the Working Group, the Chairs of the Task Forces and the representatives of the programme centres of the International Cooperative Programmes (ICPs), agreed to prepare a workplan for 2007 as requested. The numbering follows that of the Convention workplan in 2006.

### **3. EFFECTS OF MAJOR AIR POLLUTANTS ON HUMAN HEALTH AND THE ENVIRONMENT**

#### **3.1 REVIEW OF EFFECTS OF MAJOR AIR POLLUTANTS**

Description/objectives: Annual review of activities and results of ICPs and the Task Force on the Health Aspects of Air Pollution

Main activities and time schedule:

- (a) Submission of relevant information by ICPs and the Task Force on the Health Aspects of Air Pollution to the secretariat (April/May 2007);
- (b) Submission by the secretariat of the 2007 joint report of the ICPs and the Task Force on the Health Aspects of Air Pollution to the Working Group on Effects (in 2007);
- (c) Activities common to all ICPs, the Task Force on the Health Aspects of Air Pollution and the Joint Expert Group on Dynamic Modelling:
  - (i) Final report on support of effects-based approaches for the review and possible revision of the Convention protocols;
  - (ii) Updated summary report of current information on dose-response functions and stock at risk;
  - (iii) Updated review report of current information on links between field observations and critical loads and levels;
  - (iv) Review of the robustness of monitored and modelled air pollution impacts;
  - (v) Compilation of observed parameters, monitoring methodologies and intensities of effects-oriented activities;
  - (vi) Summary of effects-oriented activities in countries of Eastern Europe, Caucasus and Central Asia.

### **3.2 INTERNATIONAL COOPERATIVE PROGRAMME ON EFFECTS OF AIR POLLUTION ON MATERIALS, INCLUDING HISTORIC AND CULTURAL MONUMENTS**

Description/objectives: Quantification of the multi-pollutant effects on the corrosion of selected materials under different environmental conditions, *inter alia*, as a basis for economic evaluation of air pollution damage. A Programme Task Force led by Sweden and co-chaired by Italy, in cooperation with the Programme's main research centre (Corrosion and Metals Research Institute, Stockholm), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

- (a) Potential corrosion maps for selected materials for Italy and Switzerland;
- (b) Potential corrosion maps for selected materials at different spatial resolutions for Germany and the Czech Republic;
- (c) Report on areas of increased risk for corrosion at the urban level and on a case study on the stock of cultural heritage materials at risk;
- (d) Report on recent results on corrosion at new material exposure sites;
- (e) Twenty-third meeting of the Programme Task Force, to be held in Paris on 13–14 March 2007.

### **3.3 INTERNATIONAL COOPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF ACIDIFICATION OF RIVERS AND LAKES**

Description/objectives: Identification of the state of surface water ecosystems and their long-term changes with respect to the regional variation and impact of selected air pollutants, and including effects on biota. A Programme Task Force led by Norway, which also provides the Programme's centre (Norwegian Institute for Water Research, Oslo), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

- (a) Annual chemical intercomparison (in collaboration with all ICPs);
- (b) Annual biological intercalibration (in collaboration with all ICPs);
- (c) Report on trends in surface water chemistry: importance of confounding factors;

(d) Critical loads, target load functions and exceedances: comparison with observations from ICP Integrated Monitoring and ICP Waters sites (in collaboration with ICP Integrated Monitoring);

(e) Twenty-third meeting of the Programme Task Force, tentatively scheduled to be held in France in October 2007.

### **3.4 INTERNATIONAL COOPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF AIR POLLUTION EFFECTS ON FORESTS**

Description/objectives: Collection and assessment of comprehensive and comparable data on changes in forests under actual environmental conditions (in particular air pollution, including acidifying and eutrophying deposition, as well as other stresses) and determination of cause-effect relationships. A Programme Task Force led by Germany, in cooperation with the Programme's main coordinating centre (Federal Research Centre for Forestry and Forest Products, Hamburg, Germany), is responsible for the detailed planning and coordination of the Programme. Extensive large-scale monitoring (level I), intensive monitoring of forest ecosystems on the permanent sample plots (level II) and integrated evaluation of results are carried out.

#### Main activities and time schedule:

- (a) Annual report on trends in sulphur and nitrogen deposition;
- (b) Report on annual data quality assurance for defoliation assessment;
- (c) Report on links between nitrogen deposition, defoliation and forest growth;
- (d) Report on the effects of nitrogen deposition on species diversity;
- (e) Report on critical levels of ozone and ozone's impacts on forest vegetation (in collaboration with ICP Vegetation);
- (f) Twenty-third meeting of the Programme Task Force, to be held in Zvolen (Slovakia) from 12 to 16 May 2007.

### **3.5 INTERNATIONAL COOPERATIVE PROGRAMME ON EFFECTS OF AIR POLLUTION ON NATURAL VEGETATION AND CROPS**

Description/objectives: Evaluate the effects of air pollutants and other stresses on (semi-)natural vegetation and crops. For ozone: identify dose/response functions; assess economic losses on crops; validate critical levels for (semi-)natural vegetation and crops and further develop the flux-based approach; evaluate (semi-)natural vegetation and crops as indicators of potential damage to natural ecosystems. Evaluate and map heavy metal deposition on vegetation. Evaluate the impacts of nutrient nitrogen on (semi-)natural vegetation. A Programme Task Force, led by

the United Kingdom, with the cooperation of the Programme's coordination centre (Centre for Ecology and Hydrology, Bangor, United Kingdom), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

- (a) Annual report on the extent of ozone damage to vegetation, using standardized experiments with ozone-sensitive species;
- (b) Report on the Ellenberg modelling approach to identify (semi-)natural vegetation at risk from ozone;
- (c) Interim report on assessment of evidence of effects of current ambient ozone on vegetation;
- (d) Flux-based maps of risk of ozone damage to generic crops and tree species for use in integrated assessment modelling (in collaboration with ICP Forests and EMEP Meteorological Synthesizing Centre – West);
- (e) Report on progress with the 2005–2006 survey of heavy metal and nitrogen concentrations in mosses;
- (f) Twentieth meeting of the Programme Task Force, to be held in Dubna (Russian Federation) from 5 to 9 March 2007.

### **3.6 INTERNATIONAL COOPERATIVE PROGRAMME ON INTEGRATED MONITORING OF AIR POLLUTION EFFECTS ON ECOSYSTEMS**

Description/objectives: Determination and prediction of the state of ecosystems and their long-term changes with respect to the regional variation and impact of selected air pollutants, with special attention to effects on biota. A Programme Task Force led by Sweden is responsible for planning, coordinating and evaluating the Programme. The Programme's centre (Finnish Environment Institute, Helsinki) is entrusted with collecting, storing, processing and analysing data from countries taking part in the Programme.

Main activities and time schedule:

- (a) Report on updated calculations on heavy metal fluxes and budgets;
- (b) Report on nitrogen fluxes and carbon-nitrogen interactions, using monitoring data;
- (c) Critical loads, target load functions and exceedances: comparison with observations from ICP Integrated Monitoring and ICP Waters sites (in collaboration with ICP Waters):

(d) Fifteenth meeting of the Programme Task Force, to be held in Grafenau (Germany) from 9 to 11 May 2007.

### **3.7 INTERNATIONAL COOPERATIVE PROGRAMME ON MODELLING AND MAPPING OF CRITICAL LEVELS AND LOADS AND AIR POLLUTION EFFECTS, RISKS AND TRENDS**

Description/objectives: Determine critical loads and levels and their exceedances for selected pollutants. Develop and apply other methods for effects-based approaches such as dynamic modelling. Model and map the present status of and trends in impacts of air pollution. A Programme Task Force led by Germany is responsible for the detailed planning and coordination of activities. The Task Force uses available and accepted data drawing on the work of other task forces, ICPs and EMEP. The Coordination Centre for Effects (CCE, at the Netherlands Environmental Assessment Agency, Bilthoven, Netherlands) provides scientific and technical support to the Task Force and to other effects-related activities. It develops methods and models for calculating critical loads and levels and for other effects-based approaches. It produces maps of critical loads and levels and their exceedances and other risk parameters related to potential damage and recovery.

Main activities and time schedule:

- (a) Report on modelling nitrogen effects, including biodiversity (in collaboration with ICPs and other programmes);
- (b) Report on modelling heavy metal critical loads and trends of risks (in collaboration with ICPs and other programmes);
- (c) Final report on effects-based approaches for the review and possible revision of the Protocol on Heavy Metals (in collaboration with EMEP Meteorological Synthesizing Centre – East);
- (d) Report on the effects-based approach in integrated assessment (in collaboration with the EMEP Centre for Integrated Assessment Modelling);
- (e) Revision of the *Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends* (in collaboration with ICP Materials and ICP Vegetation);
- (f) Twenty-third meeting of the Programme Task Force and seventeenth CCE workshop, to be held in Sofia from 23 to 27 April 2007.

### **3.8 EFFECTS OF AIR POLLUTANTS ON HUMAN HEALTH**

Description/objectives: Preparation of state-of-the-art reports on the direct and indirect effects of long-range transboundary air pollution on human health:

(a) The World Health Organization (WHO) is invited to present relevant progress/technical reports to the Working Group on Effects, so that knowledge acquired by WHO can be applied in the further implementation of the Convention. Additional information/reports should be provided, when appropriate, by other international organizations, interested Governments and/or other subsidiary bodies under the Convention.

(b) To support the Working Group on Effects and the Executive Body in preparing/substantiating new and/or updating existing protocols, the joint Task Force of WHO/European Centre for Environment and Health (ECEH) and the Executive Body, led by WHO/ECEH, Bonn Office, evaluates and assesses the health effects of long-range transboundary air pollution and reports on the subject.

Main activities and time schedule:

- (a) Annual progress report on health impacts of ozone and particulate matter;
- (b) Assessment of the health hazards of “new” persistent organic pollutants (POP) considered by the Working Group on Strategies and Review (reports may be requested by the Working Group);
- (c) Ninth meeting of the Task Force on the Health Aspects of Air Pollution, tentatively scheduled to be held in Bonn (Germany) from 27 to 28 March 2007.

### **3.9 DYNAMIC MODELLING**

Description/objectives: Recovery of ecosystems is an important consideration for the development of air pollution strategies, and work on various ecosystems at different scales is carried out by several ICPs. A Joint Expert Group on Dynamic Modelling, led by the United Kingdom and Sweden, brings together experts from these programmes to share knowledge and produce joint reports on all aspects of dynamic modelling.

Main activities and time schedule:

- (a) Revision of dynamic model and target load coverage for acidity in Europe;
- (b) Review of progress on dynamic modelling and target loads of nutrient nitrogen;
- (c) Predictions of biological recovery in surface waters using empirical chemical-biological relationships;

- (d) Development of dynamic models accounting for the confounding effects of climate change (in collaboration with ICP Waters);
- (e) Report of the seventh meeting of the Joint Expert Group to the twenty-sixth session of the Working Group on Effects;
- (f) Eighth meeting of the Joint Expert Group, tentatively scheduled to be held in autumn 2007.