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**ECONOMIC COMMISSION FOR EUROPE**

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

Working Group on Effects

Twenty-seventh session  
Geneva, 24–26 September 2008  
Item 6 of the provisional agenda

**FURTHER DEVELOPMENT OF EFFECTS-ORIENTED ACTIVITIES**

**DRAFT 2009 WORKPLAN**

Note by the Bureau of the Working Group on Effects

**INTRODUCTION**

1. The Executive Body, at its twenty-fifth session, continued the procedure for the workplan to compile Convention's workplan as one document, made available as an addendum to its session report (ECE/EB.AIR/91.Add.2). At its meeting held from 5 to 6 February 2008 in Geneva, the Extended Bureau of the Working Group on Effects, comprising the Bureau of the Working Group, the Chairs of the Task Forces and Expert Group and the representatives of the programme centres of the International Cooperative Programmes (ICPs), agreed to prepare a draft workplan for 2009. The numbering follows that of the Convention workplan for 2008.

### **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 the International Cooperative Programmes (ICPs) and the Task Force on the Health Aspects of Air Pollution (Task Force on Health). Appropriate reports to the sessions of the Executive Body on the reviews and revisions of Convention's protocols.

Main activities and time schedule:

- (a) Submission of relevant information and reports by ICPs and the Task Force on Health to the secretariat (April/May 2009);
- (b) Submission of results to the secretariat for the 2009 joint report of the ICPs, the Task Force on Health and the Joint Expert Group on Dynamic Modelling to the Working Group on Effects (May 2009);
- (c) Submission of appropriate reports to the sessions of the Working Group on Effects and the Executive Body;
- (d) Activities common to all ICPs, the Task Force on Health and the Joint Expert Group on Dynamic Modelling:
  - (i) Status report on airborne nitrogen impacts on the environment (in collaboration with the Task Force on Reactive Nitrogen and the Task Force on Integrated Assessment Modelling);
  - (ii) Compilation report on selected key monitored and modelled parameters, tentatively based on the guidelines on reporting of monitoring and modelling of air pollution effects;
  - (iii) Report on the update of the strategy of the effects-oriented activities.

#### **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) Report on assessment of stock of materials at risk including cultural heritage;
- (b) Report on combined stock at risk and mapping for selected urban areas of Italy;
- (c) Report on the material sample exposure in 2008–2009;
- (d) Report on soiling of exposed materials;
- (e) Twenty-fifth meeting of the Programme Task Force, tentatively scheduled to be held from 1 to 3 April 2009 in Madrid, and its report.

### **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 (the Norwegian Institute for Water Research, Oslo), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

- (a) Finalize the 20-year report;
- (b) Interim report on assessment of metals in surface waters, with a focus on mercury from air pollution;
- (c) Interim report on nutrient effects of nitrogen deposition to surface waters;
- (d) Annual chemical intercomparison (in collaboration with all ICPs);
- (e) Annual biological intercalibration (in collaboration with all ICPs);
- (f) Twenty-fifth meeting of the Programme Task Force, tentatively scheduled to be held in autumn 2009, and its report.

### **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 (the 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) Report on trends in sulphur and nitrogen deposition;
- (b) Report on crown condition assessment and its data quality assurance;
- (c) Report on relationships between nitrogen deposition and forest growth;
- (d) Twenty-fifth meeting of the Programme Task Force, tentatively scheduled to be held in May 2009 in Denmark, and its report.

### **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 (the 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) Report on the risk of damage of ozone to (semi-)natural vegetation communities in Europe;
- (b) Report on flux-based assessment of risk of damage of ozone to managed pastures in Europe;
- (c) Report on ozone exposure and impacts on vegetation in the Nordic countries and the Baltic States;
- (d) Report on the temporal trends in heavy metal concentrations in mosses between 1990 and 2005;
- (e) Report on the spatial variation in heavy metal and nitrogen concentrations in mosses;

(f) Twenty-second meeting of the Programme Task Force, tentatively scheduled to be held from 2 to 5 February 2009 in Braunschweig, Germany, and its report.

### **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) Interim report on updated heavy metal budgets and critical loads at integrated monitoring sites;
- (b) Interim report on development and collaboration with the Long-term Ecological Research network (LTER) in Europe;
- (c) Interim report on the calculation of critical loads, and trends of sulphur and nitrogen at integrated monitoring sites;
- (d) Seventeenth meeting of the Programme Task Force, tentatively scheduled to be held from 6 to 8 May 2009 in Tallinn, and its report.

### **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 exceedance and other risk parameters related to potential damage and recovery.

Main activities and time schedule:

- (a) Report on transferring data on critical loads for acidification and eutrophication in the GAINS model to support the work on revising air pollution policies in Europe (in collaboration with the Centre for Integrated Assessment Modelling (CIAM));
- (b) Report on applications of the critical load database for European ecosystems, including the European Union's Natura 2000 areas, to support the work on revising air pollution policies in Europe (in collaboration with CIAM);
- (c) Report on dynamic modelling of biogeochemical processes and on biodiversity;
- (d) Report on robustness analysis on the use of critical loads of acidity and nutrient nitrogen in integrated assessment modelling;
- (e) Twenty-fifth meeting of the Programme Task Force and nineteenth workshop of the Coordination Centre for Effects, to be held from 11 to 15 May 2009 in Stockholm, and its report.

### **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 and 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 and 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 the 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) Report on health impacts of particulate matter;
- (b) Report on health impacts of ozone;
- (c) Interim report on health impacts due to biomass combustion;
- (d) Report on health relevance of pollution alert systems;
- (e) Draft guidelines for reporting on monitoring and modelling of health effects of air pollution;

- (f) Twelfth meeting of the Task Force on the Health Aspects of Air Pollution, tentatively scheduled to be held on 28 and 29 April 2009 in Bonn, Germany, and its report.

### **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. The 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) Discussion of the results of the 2007/2008 call for data by CCE to the national focal centres of ICP Modelling and Mapping;
- (b) Reports in dynamic modelling of nutrient nitrogen in terrestrial systems, interactions between climate change and air pollution, biological response and terrestrial carbon sequestration;
- (c) Contribution to the revision of the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone;
- (d) Report of the ninth meeting of the Joint Expert Group to the twenty-eighth session of the Working Group on Effects;
- (e) Tenth meeting of the Joint Expert Group, tentatively scheduled to be held in autumn 2009, and its report.

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