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

Working Group on Effects

(Twenty-fourth session, Geneva, 31 August–2 September 2005)

Item 6 (a) of the provisional agenda

DRAFT 2006 WORK-PLAN FOR THE EFFECT-ORIENTED ACTIVITIES */

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

Introduction

1. The Executive Body, at its twenty-second session, invited the secretariat to discuss with the Bureaux of the subsidiary bodies the possibilities for streamlining documentation and making better use of the Internet for disseminating information (ECE/EB.AIR/83, item 56 (i)). At its meeting, held in Geneva from 23 to 25 February 2005, 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 streamlined workplan for 2006. The numbering follows that of past Convention workplans.

Documents prepared under the auspices or at the request of the Executive Body for the Convention on Long-range Transboundary Air Pollution for GENERAL circulation should be considered provisional unless APPROVED by the Executive Body.
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*/ This document was submitted 2 days later than the required deadline of 21 June 2005 due to late submission of information to the secretariat and to delays in final editing.

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 2006);
- (b) Secretariat to submit the 2005 joint report of the ICPs and the Task Force on the Health Aspects of Air Pollution to the Working Group on Effects in 2006.

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 Italy, in cooperation with the Programme's main research centre (Swedish Corrosion Institute, Stockholm) is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

- (a) High-resolution exceedance maps for heritage materials for Germany and the Czech Republic;
- (b) European maps of increased risk for copper run-off for 1980, 1985, 1990, 1995, 2000 and 2005 (using EMEP data);
- (c) Report on trends of corrosion and pollution 1987-2003;
- (d) Technical manual for new trend exposures in a new network;
- (e) Workshop (tentatively planned for 26-27 January 2006 in Italy) and its proceedings on economic impacts of air pollution on cultural heritage (in collaboration with the Network of Experts on Benefits and Economical Instruments and the CULT-STRAT project);
- (f) Twenty-second meeting of the Programme Task Force, 3-5 April 2006, Paris.

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) Final report on critical loads of surface waters;
- (b) Interim report on trends in surface water chemistry: importance of confounding factors;
- (c) Annual chemical intercomparison (in collaboration with all ICPs);
- (d) Annual biological intercalibration (in collaboration with all ICPs);
- (e) Workshop and its proceedings on confounding factors in long-term trends of acidification (with ICP Integrated Monitoring and the European Union (EU) EuroLimpacs project);
- (f) Twenty-second meeting of the Programme Task Force, October 2006, Estonia (tentatively).

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 assessment report on trends in deposition and effects of nitrogen and sulphur at level II sites;
- (b) Report on dynamic modelling of effects of nitrogen and acidity on forest soils (in

collaboration with ICP Modelling and Mapping);

- (c) Report on annual data quality assurance for defoliation assessment;
- (d) Report on the finalization of the new level II data bank;
- (e) Twenty-second meeting of the Programme Task Force, 22-24 May 2006, Tallinn.

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 natural vegetation and crops. For ozone: identify dose/response functions; assess economic losses on crops; validate critical levels for natural vegetation and crops and further develop the flux-based approach; evaluate 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) Report on the extent of ozone damage to ozone-sensitive species of crops and (semi-) natural vegetation in 2005 using standardized experiments;
- (b) Refined ozone critical level exceedance maps based on the new critical levels of ozone (in collaboration with EMEP Meteorological Synthesizing Centre-West);
- (c) Report on the impacts of ozone on vegetation in a changing climate;
- (d) Interim report on risk assessment and mapping procedures for communities of (semi-) natural vegetation at risk from ozone;
- (e) Report on the long-term (about 100 years) temporal trends in the nitrogen concentrations in mosses using herbarium material;
- (f) Report on the temporal trends in the European database on heavy metals in mosses;
- (g) Report on the interactive impacts of ozone and nitrogen on crops and (semi-) natural vegetation;
- (h) Workshop (Oberurgl, Austria, 15-19 November 2005) and its proceedings: "Critical levels of ozone: further applying and developing the flux-based concept";
- (i) Nineteenth meeting of the Programme Task Force, February 2006 (tentatively).

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) Assessment report on observed trends in sulphur and nitrogen concentrations and fluxes at ICP Integrated Monitoring sites;
- (b) Assessment report of climate change impacts on acidification recovery using site-specific dynamic modelling (in collaboration with ICP Waters);
- (c) Final assessment report on critical loads of heavy metals using monitoring site data;
- (d) Workshop and its proceedings on confounding factors in long-term trends of acidification (in collaboration with ICP Waters and the EU EuroLimpacs project);
- (e) Fourteenth meeting of the Programme Task Force, May 2006, Riga.

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 effect-based approaches such as dynamic modelling. Model and map the present status 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 Center for Effects (CCE, at the National Institute of Public Health and the Environment, Bilthoven, Netherlands) provides scientific and technical support to the Task Force and to other effect-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) Updating and evaluation of the European database on critical loads (acidification, eutrophication, heavy metals) and target load functions (acidification);
- (b) Workshop and report to further develop, harmonize and disseminate European scale methods to support national focal centres (NFC) to assess trends in air pollutants and their effects, in particular using dynamic models (in collaboration with ICPs and other programmes);
- (c) Report on evaluating and harmonizing ecosystem data, including base cation deposition and European land cover maps (in collaboration with EMEP and other programmes);
- (d) Substantiation report on effect-based approaches for the review and possible revision of the Protocol on Heavy Metals (in collaboration with EMEP Meteorological Synthesizing Centre-East)
- (e) Substantiation report on effects-based approaches for the review and possible revision of relevant multi-pollutant/multi-effect protocols and European agreements (with the Centre for Integrated Assessment Modelling);
- (f) Workshop and report on methods to model (risk of) nitrogen effects, including biodiversity (in collaboration with ICPs and other programmes);
- (g) Workshop and report on links between air pollution effects and climate change on a European scale, focussing on reactive nitrogen (in collaboration with EMEP and ICPs);
- (h) Twenty-second meeting of the Programme Task Force and sixteenth CCE workshop, April/May 2006 (tentatively).

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) Short paper on improved assessment of health effects in non-EU countries, which are Parties to the Convention;
- (b) Annual progress report on continued assessment of health impacts of particulate matter considering contributions of various components and sources of the particulate matter mix (in collaboration with EMEP);
- (c) Interim assessment report on updated assessment of health risks of heavy metals (in collaboration with ICP Vegetation, ICP Modelling and Mapping and EMEP);
- (d) Assessment of the health hazards of (new) persistent organic pollutants (POPs) considered by the Working Group on Strategies and Review (reports dependent on the request of the Working Group);
- (e) Ninth meeting of the Task Force on the Health Aspects of Air Pollution, April/May 2006, Bonn, Germany (tentatively).

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) Determination and evaluation of the key nitrogen and heavy metal processes for dynamic modelling;
- (b) Report from the 2005 workshop on nitrogen dynamic processes;
- (c) Report from the sixth meeting of Joint Expert Group to the twenty-fifth session of the Working Group;
- (d) Seventh meeting of the Joint Expert Group, autumn 2006 (tentatively).