UNITED NATIONS **E**

Economic and Social Council

Distr.
GENERAL

ECE/EB.AIR/WG.1/2006/3/Add.1
22 June 2006

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

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

Working Group on Effects

Twenty-fifth session
Geneva, 30 August – 1 September 2006
Item 4 of the provisional agenda

2006 JOINT REPORT OF THE INTERNATIONAL COOPERATIVE PROGRAMMES AND THE TASK FORCE ON THE HEALTH ASPECTS OF AIR POLLUTION

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

Addendum

REVIEW OF RECENT EFFECTS-ORIENTED ACTIVITIES

1. Pursuant to the decision taken by the Executive Body at its twenty-third session on the Convention's 2006 workplan (ECE/EB.AIR/87, para. 84), the secretariat compiled the annual review of the achievements in 2006 of the International Cooperative Programmes (ICPs) and the Task Force on the Health Aspects of Air Pollution, based on the information provided by the lead countries and the programme centres (ECE/EB.AIR/WG.1/2006/3). Information on the general activities carried out by ICPs and the Task Force since the twenty-fourth session of the Working Group on Effects and the most important recent publications of their results are summarized in annexes I–VII of this report.

Annex I

INTERNATIONAL COOPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF AIR POLLUTION EFFECTS ON FORESTS (ICP FORESTS)

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The twenty-second Task Force meeting took place from 21 to 24 May 2006 in Tallinn and was attended by 77 experts and national representatives from 31 countries. It addressed the following main topics:

(a) Future strategy of ICP Forests;
(b) Future cooperation with the European Commission;
(c) Implementation and evaluation of intensive monitoring (level II);
(d) Evaluations of large-scale data (level I);
(e) Deposition measurements and dynamic modelling;
(f) Biodiversity assessments and ground vegetation species composition in relation to air pollution.

2. The programme coordinating group convened on 8–9 December 2005 in Hamburg (Germany) and proposed to extend the existing programme strategy for one more year. It decided to develop a mid-term strategy beyond 2007 which would take into account the planned cooperation with the European Community under its forthcoming LIFE+ Regulation. To this end, the group was extended to include external experts, and it developed the first draft of a midterm strategy at its first meeting (on 18 May 2006 in Hamburg). The Task Force meeting adopted the group's proposals.

3. Monitoring of 6100 level I plots and 860 level II plots continued. Results were published in the 2006 technical report (Lorenz et al. 2006) and in the 2006 executive report (Fischer et al. 2006). The monitoring data were evaluated as follows:

(a) Mean deposition of ammonium, nitrate and sulphate on level II plots, as well as the temporal development of deposition for the years 1998–2003;
(b) Application of dynamic models on level II plots in cooperation with ICP Modelling and Mapping: the very simple dynamic (VSD) model on 37, the SAFE model on 8 and the BERN model on 3 sites;
(c) Relationships between ground vegetation species composition and nitrogen deposition on 500 level II plots;
(d) Temporal and spatial trends of large-scale forest condition (defoliation) on 6100 level I plots. A new type of damage assessment was applied in this survey, mainly to record biotic damage to the assessed trees. In the future this will help to differentiate air pollution effects from other influences.

4. The programme centre of ICP Forests continues to contribute to the construction of a joint Web-based level I and level II database with the European Commission. Routine data submission and validation have started. The centre has direct access to the validated raw data and will receive regularly updated copies of the database. Until this joint database is fully implemented, the centre will maintain its own level I and level II database. Formal adjustments of data submission formats were adopted by the Task Force.

5. The test phase for the assessment of forest biodiversity is nearly completed. New methods for the assessment of stand structure, epiphytic lichens, deadwood, and ground vegetation on intensive monitoring plots (level II) and for the classification of forest types have been harmonized. The centre will update the relevant manual for adoption by the Task Force meeting in 2007. Methods for similar assessments on level I plots are being developed in cooperation with the EU project BioSoil.

6. A new working group for quality assurance in laboratories was installed. Three international cross-calibration courses for crown condition assessments were held in the Czech Republic, Finland and France to ensure the spatial and temporal consistency of crown condition assessments.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

Fischer, R.; Dobbertin, M.; Granke, O.; Karoles, K.; Köhl, M.; Kraft, P.; Mues, V.; Lorenz, M.; Seidling, W. (2006). The Condition of Forests in Europe. Executive Report 2006.

Lorenz, M.; Fischer, R.; Becher, G.; Mues, V.; Seidling, W.; Kraft, P. (2006). Forest Condition in Europe. Technical Report 2006.

Note: The references have been reproduced as received by the secretariat.

Annex II

INTERNATIONAL COOPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF ACIDIFICATION OF RIVERS AND LAKES (ICP WATERS)

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The twenty-first Task Force meeting was held in Tallinn from 17 to 19 October 2005. It was attended by 40 experts from 20 Parties to the Convention. Currently 20 countries participate in the activities of ICP Waters.

2. The Task Force considered reports from ICP Waters activities since the last meeting and results from intercalibration and intercomparison exercises.

3. The Task Force also considered progress reports from the programme centre and the national focal centres on results on trends in water chemistry, biological response, heavy metals, persistent organic pollutants (POPs) and dynamic modelling. The presentations are published in ICP Waters report 84.

4. The Task Force discussed the EU Water Framework Directive and how it might influence national monitoring activities providing results to ICP Waters.

5. The Task Force considered the following reports: (a) report on the assessment of POPs related to long-range air pollution in the aquatic environment, (b) report on the intercalibration of invertebrate fauna, (c) report on chemical intercomparison, and (d) report on critical loads, target load functions and dynamic modelling for surface waters and ICP Waters sites.

6. The report on POPs provided an overview of recently observed levels of selected POPs in freshwater fish from North America, Europe and the circumpolar Arctic, related to long-range transport and based on data from selected surveys. There was a general lack of coordinated monitoring or regional surveys focusing on POPs in freshwater environments, of which long-range transport was a major source.

7. The 2006 biological intercalibration included invertebrates from four countries. Altogether 13 countries participate regularly.

8. The 2006 chemical intercomparison included determination of major ions and heavy metals. Seventy-five laboratories in 30 countries participated. The overall results were considered acceptable. Several laboratories from Asia have expressed interest in participating in the intercalibration.

9. The report on critical loads, target load functions and dynamic modelling updated the critical load estimates for ICP Waters sites and compared these with the gridded critical load data for waters maintained by the Coordinating Centre for Effects (CCE). The report also dealt with features in determining target load functions for surface waters and sources of uncertainty in critical and target loads.

10. Representatives of the ICP Waters programme centre participated actively in the meetings of the Task Forces on ICP Integrated Monitoring, ICP Mapping and Modelling and ICP Forests and the Joint Expert Group on Dynamic Modelling.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

ICP Waters report 79/2005. An assessment of POPs related to long-range air pollution in the aquatic environment.

ICP Waters report 81/2005. Intercalibration 0905: Invertebrate fauna. NIVA-report.

ICP Waters report 82/2005. Intercomparison 0519. pH, K25, HCO3, NO3 + NO2, Cl, SO4, Ca, Mg, Na, K, total aluminium, aluminium – reactive and nonlabile, TOC, COD-Mn. Fe, Mn, Cd, Pb, Cu, Ni and Zn.

ICP Waters report 83/2006. Critical loads, target load functions and dynamic modelling for surface waters and ICP Waters sites.

ICP Waters report 84/2006. Proceedings of the 21st meeting of the ICP Waters Programme Task Force in Tallinn, Estonia, October 17–19, 2005.

Note: The references have been reproduced as received by the secretariat.

Annex III

INTERNATIONAL COOPERATIVE PROGRAMME ON EFFECTS OF AIR POLLUTION ON MATERIALS, INCLUDING HISTORIC AND CULTURAL MONUMENTS (ICP MATERIALS)

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The twenty-second meeting of the Programme Task Force was held in Catania (Italy) on 5 April 2006.

2. The Workshop on Economic Impacts of Air Pollution on Cultural Heritage took place on 6–7 April 2006 in Catania. It was organized jointly by the Network of Experts on Benefits and Economic Instruments, ICP Materials, the EU project CULT-STRAT (Assessment of Air Pollution Effects on Cultural Heritage - Management Strategies) and the local organizers at the Environmental Valuation Laboratory (ENVALAB) of the University of Catania. The workshop report was prepared by the workshop organisers and the workshop rapporteurs in consultation with the secretariat (ECE/EB.AIR/WG.1/2006/17).

3. The technical manual for new trend exposures in a new network was prepared as ICP Materials report 51.

4. Corrosion and pollution trends for 1987–2003 were evaluated and reported in the annual technical report of ICP Materials (ECE/EB.AIR/WG.1/2006/7).

5. High-resolution exceedance maps for heritage materials in Germany and the Czech Republic were produced as described in the report "Final assessment model for cultural heritage" of the EU project CULT-STRAT.

6. European maps of increased risk for copper run-off for 1980, 1985, 1990, 1995, 2000 and 2003 (using EMEP data) were produced and a manuscript was submitted to the *Journal on Environmental Monitoring*.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

V. Kucera and J. Tidblad: "Comparison of environmental parameters and their effect on atmospheric corrosion in Europe and in South Asia and Africa", Proc. 16th Int. Corros. Congr., Beijing, China, 2005.

Report No 51. Technical manual for the trend exposure programme 2005–2006.

Tidblad, J., and Kucera, V. “Tools for assessment of corrosion and soiling in the multi-pollutant situation.” Proc. 7th EC Conf. SAUVEUR – Safeguarded Cultural Heritage 2006.

Note: The references have been reproduced as received by the secretariat.

Annex IV

INTERNATIONAL COOPERATIVE PROGRAMME ON EFFECTS OF AIR POLLUTION ON NATURAL VEGETATION AND CROPS (ICP VEGETATION)

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The nineteenth meeting of the Task Force was held in Caernarvon (United Kingdom) from 30 January to 2 February 2006. It was attended by 54 experts from 17 countries, as well as representatives of ICP Forests, EMEP Meteorological Synthesizing Centre - West (MSC-W) and the Bureau of the Working Group on Effects. The Task Force established five regional centres in Slovenia, Spain, Sweden, Switzerland and the United Kingdom to collate field-based evidence for the effects of current ambient ozone concentrations on crops and (semi-)natural vegetation across the UNECE region in the coming two years.

2. At the ICP Vegetation biomonitoring sites with white clover (*Trifolium repens cv Regal*) and brown knapweed (*Centaurea jacea*) the accumulated ozone concentrations in the summer of 2005 were generally the same as or lower than in 2004 (but much lower than in 2003, a high-ozone year). The 2005 data of the biomass ratio between the ozone-sensitive and ozone-resistant clover clone followed the same trend as data from 1996 to 2004, showing a decrease in biomass ratio with increasing accumulated ozone exposure above a threshold of 40 parts per billion over a three-month period.

3. Although ozone flux models were developed for grapevine, sunflower, tomato and maize, flux-response models could not be developed yet. This was due to a lack of appropriate data sets describing the responses of these crop species to ozone.

4. The ICP Vegetation database (OZOVEG) contained ozone dose-response functions for over 80 species of (semi-)natural vegetation and was used to identify plant traits associated with sensitivity to ozone. Available data indicated that species of the *Fabaceae* family were more sensitive to ozone than species of the families *Asteraceae*, *Caryophyllaceae* and *Poaceae*. Of all the potential indicators of ozone sensitivity investigated, Ellenberg ecological habitat scores showed the greatest potential for wider application. Comparison of relative sensitivity to ozone with Ellenberg indicator values showed that light-loving plants, plants from dry soils and plants which can tolerate moderately saline conditions were the most sensitive to ozone. There were no relationships between Ellenberg nitrogen, temperature or "reaction" (pH) scores and the relative ozone sensitivity of species. There was also no relationship between the ozone sensitivity of species and Grime's plant functional types (i.e. whether the plants were competitors, stress-tolerators or ruderals).

5. The programme centre of ICP Vegetation contributed to six background papers for the Workshop on Critical Levels of Ozone: Further Applying and Developing the Flux-based Concept and submitted four papers to a special issue of *Environmental Pollution*. Further details are in ECE/EB.AIR/WG.1/2006/15.

6. The Heavy Metals in European Mosses survey for 2005–2006 is being conducted in 32 countries (about 7,000 sites), and for the first time 18 countries are also determining the total nitrogen concentration in mosses (at about 3,200 sites). Further details are in EB.AIR/WG.1/2003/8.

7. Data from the Heavy Metals in European Mosses survey for 2000–2001 were used to establish the performance of the EMEP heavy metals deposition model (see EMEP Meteorological Synthesizing Centre - East Technical Report 8/2005). A significant positive correlation (R = 0.56) between lead concentrations in mosses and modelled total lead deposition indicated that the EMEP model managed to mimic the spatial pattern of lead pollution levels across Europe. However, regional variations were observed for correlation coefficients. A subsequent comparison was restricted to selected grid cells in Scandinavia where EMEP monitoring stations were located – that is, a comparison was performed at locations representative for the aims of EMEP (modelling long-range transboundary air pollution). For this, a very high correlation of 0.91 was found, indicating that the EMEP model simulated atmospheric transport well.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

Harmens, H., Mills, G., Emberson, L., Ashmore, M. 2006. Implications of climate change for the stomatal flux of ozone: a case study for winter wheat. Environmental Pollution (submitted).

Harmens, H., Mills, G., Hayes, F., Williams, P. and the participants of the ICP Vegetation. 2006. Air Pollution and Vegetation: the ICP Vegetation Annual Report 2005/2006. Prepared for the 25th session on the Working Group on Effects.

Harmens, H., Mills, G. 2006. Impacts of ozone on vegetation in a changing climate. Technical Report prepared for the 25th Session of the Working Group on Effects. EB.AIR/WG.1/2006/8.

Hayes, F., Jones, M.L.M., Ashmore, M. Mills, G. 2006. Meta-Analysis of the relative sensitivity of semi-natural vegetation to ozone. Environmental Pollution (submitted).

Hayes, F., Mills, G., Harmens, H., Novak, K., Williams, P. 2006. ICP Vegetation experimental protocol for monitoring the incidences of ozone injury on vegetation. http://icpvegetation.ceh.ac.uk

Jones, M.L.M., Hayes, F., Mills, G., Sparks, T.H., Fuhrer, J. 2006. Predicting community sensitivity to ozone, using Ellenberg Indicator values. Environmental Pollution (submitted).

Mills, G., Hayes, F., Jones, M.L.M., Cinderby, S. 2006. Identifying ozone-sensitive communities of (semi-)natural vegetation suitable for mapping exceedance of critical levels. Environmental Pollution (in press).

Note: The references have been reproduced as received by the secretariat.

Annex V

INTERNATIONAL COOPERATIVE PROGRAMME ON INTEGRATED MONITORING OF AIR POLLUTION EFFECTS ON ECOSYSTEMS (ICP INTEGRATED MONITORING)

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The fourteenth meeting of the Task Force was held in Riga on 26–28 April 2006. The programme included a one-day workshop on the assessment of ICP Integrated Monitoring data.

2. ICP Integrated Monitoring was represented at the Task Force meetings of ICP Forests, ICP Waters and ICP Modelling and Mapping.

3. Data from ICP Integrated Monitoring sites were used in the following EU projects:

(a) CNTER (Carbon and nitrogen interactions in forest ecosystems, www.flec.kvl.dk/cnter);

(b) EURO-LIMPACS (Integrated project to evaluate impacts of global change on European freshwater ecosystems, www.eurolimpacs.ucl.ac.uk);

(c) ALTER-Net (A long-term biodiversity, ecosystem and awareness research network, www.alter-net.info).

4. Scientific work on priority topics continued:

(a) Calculation of pools and fluxes of heavy metals and relations to critical limits and risk assessment. A scientific manuscript was prepared.

(b) Analysis of long-term trends. Monthly concentrations and fluxes for bulk deposition, throughfall deposition and runoff and soil water for the years 1993–2003 were used in a trend assessment for the individual ICP Integrated Monitoring sites. The results were reported in the 2006 annual report of ICP Integrated Monitoring. The data assessment would continue in 2006. Statistically significant changes in several variables were observed.

(c) Dynamic modelling. This work had strong links to EU projects. A scientific paper based on the first results from site-specific dynamic modelling of climate change impacts on acidification recovery (in collaboration with ICP Waters and based on the results of the EU project EURO-LIMPACS) was prepared (Wright et al. 2006). First results on the use of dynamic modelling forecasts to derive future target loads for nitrogen and sulphur in atmospheric deposition and comparison of dynamic and steady-state models for calculations of critical loads were presented in the 2006 annual report of ICP Integrated Monitoring. A report of links between field observations and critical loads (together with ICP Waters and CCE) will be prepared in 2007.

(d) Calculation of element fluxes of nitrogen and sulphur compounds and interactions on carbon-nitrogen ratios (C/N). Work on proton and nitrogen budgets was published in 2005 (Dise et al. 2005a and b, Forsius et al. 2005), partly in cooperation with ICP Forests. A more comprehensive assessment of nitrogen budgets and C/N interactions is planned for 2007.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

Dise, N., Gundersen, P., Salm, C. van der, Forsius, M. 2005. Leaching of nitrogen deposition in the ground water. In: The Condition of Forests in Europe: Executive Report 2005. [Hamburg], Federal Research Centre for Forestry and Forest Products (BHF). P. 23-24. ISSN 1020-587X.

Dise, N., Gundersen, P., Salm, C. van der, Forsius, M. 2005. Nitrogen retention and release in European forests: deriving indicators from large databases. In: Lorenz, M., Becher, G., Mues, V., Fischer, R., Becker, R., Calatayd, V., Dise, N., Krause, G.H.M., Sanz, M., Ulrich, E. Forest Condition in Europe : 2005 Technical Report of ICP Forests.. P. 64-68. Work Report of the Institute for World Forestry 2005/2.

Forsius, M., Kleemola, S. and Starr, M. 2005. Proton budgets for a network of European forested catchments: Impacts of nitrogen and sulphur deposition. Ecological Indicators 5: 73-83.

Kleemola, S. and Forsius, M. (eds) 2005. 14th Annual Report 2005. ICP Integrated Monitoring. The Finnish Environment 788, p. 82. Helsinki, Finland. ISBN 952-11-2026-6.

Lundin, L., Kleemola, S., Forsius, M. 2005. International integrated monitoring of ecosystems observes effects of air pollution and climate change. In: Hunová, I., Ostatnická, J., Dostálová, Z., Navrátil, T.. Acid rain 2005 : 7th International conference on acid deposition, Prague, Czech Republic, June 12-17, 2005 : Conference abs tracts. Prague, Czech Hydrometeorological Institute. P. 344. ISBN 80-86690-25-3.

Wright, R. F., Larssen, T., Camarero, L., Cosby, B. J., Ferrier, R. C., Helliwell, R., Forsius, M., Jenkins, A., Kopácek, J., Majer, V., Moldan, F., Posch, M., Rogora, M., Schöpp, W. 2005. Recovery of acidified European surface waters. Environmental Science & Technology 39(3): 64A-72A. ISSN 0013-936X.

Wright, R.F., Aherne, J., Bishop, K., Cosby, B.J. Evans, C.D., Forsius, M., Helliwell, R., Hruska, J., Jenkins,. A., Moldan, F., Posch, M. and Rogora, M. 2006. Modelling the effect of climate change on recovery of acidified freshwaters: relative sensitivity of individual processes in the MAGIC model. Science of the Total Environment (in press).

Note: The references have been reproduced as received by the secretariat.

Annex VI

INTERNATIONAL COOPERATIVE PROGRAMME ON MODELLING AND MAPPING OF CRITICAL LOADS AND LEVELS AND AIR POLLUTION EFFECTS, RISKS AND TRENDS (ICP MODELLING AND MAPPING)

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The twenty-first meeting of the Task Force was held in Bled (Slovenia) on 6–7 April 2006, back to back with the sixteenth CCE workshop on 3–5 April. The Task Force meeting was attended by experts from 23 countries, as well as representatives of EMEP, other ICPs and organizations outside the Convention.

2. The Task Force evaluated and adopted the critical and target load updates made by several countries.

3. Several national focal centres (NFCs) compared base cation deposition data of MSC-W to their national estimates. Some had linked national high-resolution deposition models to the EMEP scale model and analysed the resulting critical load exceedances.

4. The new pan-European land cover database, merged from land cover maps of the CORINE (Coordination of Information on the Environment) programme and the Stockholm Environment Institute, was available for use in work under the Convention. The Task Force invited NFCs to compare this database to their national data and report discrepancies to CCE, to review and use the detailed information on ecosystems and to incorporate them into the submissions to CCE.

5. The Task Force discussed the revised definition of gap closure in optimizing emission reduction requirements in the analysis of the Clean Air for Europe thematic strategy of the European Commission. It used a maximum technically feasible reduction scenario as an endpoint for the gap closure, which at 100% might still leave some ecosystems exceeded. This "scenario" gap closure differed from the "exceedance" gap closure mostly used earlier. The Task Force acknowledged that effects-based modelling was anchored in the precautionary principle to sustainably protect European ecosystems and prevent critical load exceedances. It specifically recommended the maintenance of Europe-wide effects-based gap closure approaches to acidifying and eutrophying air pollutants. It stated that emission abatement strategies should consider structural changes and future improvements in technical emission abatement techniques, and that therefore any scenario-based deposition should be considered as only an interim goal.

6. The expert panel on critical loads of heavy metals refined the methodology for determining critical loads of heavy metals and further developed timescales of damage or recovery from heavy metal effects. In addition, the Task Force on Heavy Metals was supported in applying effects-based approaches for the review of the 1998 Protocol on Heavy Metals.

7. ICP Modelling and Mapping will document stock at risk and summarize cause-effect indicators as used for critical load and dynamic modelling. It invited ICPs carrying out monitoring to compare these indicators to monitoring results and to assess their links to appropriate dose-response functions. This would help to identify links between field observations and critical loads.

8. The Task Force specified items for national studies on biases (direction and magnitude) and uncertainties of critical loads. The results should be analysed in relation to integrated assessment modelling.

9. The assessment of links between the effects of air pollution and biodiversity and climate change will be the main focus of ICP Modelling and Mapping work in the near future. In particular, attention should be given to the further development of models of nitrogen dynamics and effects on terrestrial ecosystems.

10. CCE will conduct a call in 2006 for voluntary contributions from NFCs to test and review new critical limits and methods in simple steady-state and dynamic modelling applications. These are described in the CCE workshop background document ("Developments in deriving critical limits and modelling critical loads of nitrogen for terrestrial ecosystems in Europe") and in relevant chapters of the *Manual on methodologies and criteria for modelling and mapping critical loads and levels and air pollution effects, risks and trends*. The background document will be updated in spring 2007 and is expected to be a main basis for a possible future call for critical loads data.

11. NFCs were encouraged to study the interaction between climate change effects and acidification and eutrophication processes, including sensitivity studies of potential scenarios (bias evaluation).

12. The ICP will further cooperate with Convention bodies and other organizations to develop methods and knowledge regarding nitrogen effects. Noting the various effects connected to the nitrogen cascade not fully covered by the Convention work, ICP Modelling and Mapping supports the work done in programmes such as the NitroEUrope project, COST Action 729, the International Nitrogen Initiative, and the process on streamlining European biodiversity indicators (SEBI2010), which supports the Convention on Biodiversity. In particular, the Task Force will further support the application of nutrient nitrogen critical load exceedances as a headline indicator of risk to biodiversity in SEBI2010 with methods and data.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

Curtis C, Posch M, Casals-Carrasco P, Catalan J, Hughes M, Kernan M, Ventura M (2005) The significance of European high mountain lakes in critical load distributions at the EMEP grid scale. *Aquatic Sciences* 67: 252-262

Hettelingh J-P, Posch M, Potting J (2005) Country-dependent characterisation factors for acidification in Europe – A critical evaluation. *International Journal of Life Cycle Assessment* 10(3): 177-183

Posch M, Slootweg J, Hettelingh J-P (eds) (2005) European critical loads and dynamic modelling: CCE Status Report 2005. Coordination Center for Effects, MNP Report 259101016, Bilthoven, Netherlands, 171 pp www.mnp.nl/cce

Slootweg J, Hettelingh J-P, Posch M, Dutchak S, Ilyin I (eds) (2005) Critical loads of cadmium, lead and mercury in Europe. Coordination Center for Effects, MNP Report 259101015, Bilthoven, Netherlands, 146 pp www.mnp.nl/cce

Van Loon M, Tarrasón L, Posch M (2005) Modelling base cations in Europe. MSC-W Technical Report 2/05, Norwegian Meteorological Institute, Oslo, Norway, 58 pp

Wright RF, Cosby BJ, Høgåsen T, Larssen T, Posch M (2006) Critical loads, target load functions and dynamic modelling for surface waters and ICP Waters sites. ICP-Waters Report 83/2006, Norwegian Institute for Water Research, Oslo, Norway, 35 pp

Note: The references have been reproduced as received by the secretariat.

Annex VII

TASK FORCE ON THE HEALTH ASPECTS OF AIR POLLUTION

I. ACTIVITIES SINCE THE TWENTY-FOURTH SESSION OF THE WORKING GROUP ON EFFECTS

1. The ninth meeting of the Task Force was held in Berlin on 30–31 May 2006 with 28 participants from 15 Parties. The World Health Organization's European Centre for Environment and Health (WHO/ECEH) had invited participants from all countries of Eastern Europe, Caucasus and Central Asia (EECCA). Representatives of Belarus, Georgia, Kyrgystan and the Russian Federation attended the meeting with financial support from Germany's Ministry of the Environment.

2. The activities focused on the preparation of the report on heavy-metal-related health risks from long-range transboundary air pollution. The Task Force invited experts to review and update the preliminary assessment completed in 2002. The draft prepared by the experts was subject to review and comments at the Task Force meeting. The conclusions of the assessment are presented in the meeting report (ECE/EB.AIR/WG.1/2006/12)

3. The Task Force also worked on the WHO report "Health risks of particulate matter from long-range transboundary air pollution", which was published in April 2006, and on the draft on ozone-related health risks from long-range transboundary air pollution.

4. The Task Force took note of the global update of the WHO air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide, which had been prepared by WHO.

5. At the request of the Working Group on Strategies and Review, the Task Force worked on estimating the health impacts of air pollution in EECCA. This included gathering and analysing information on air quality management strategies in EECCA, as well as evaluating information on air quality.

II. LIST OF PUBLISHED DOCUMENTS AND REPORTS

WHO (2006) Health risks of particulate matter from long-range transboundary air pollution. World Health Organization, 99 pp. E88189 (http://www.euro.who.int/document/e88189.pdf)

WHO (2006) WHO air quality guidelines global update 2005. Report on a working group meeting, Bonn, Germany, 18-20 October 2005. World Health Organization, 30 pp. E87950 (http://www.euro.who.int/document/e87950.pdf)

WHO (2005) Health basis for air quality management in Eastern Europe, Caucasus and Central Asia. Report from a WHO consultative meeting, Moscow, Russian Federation, 30-31 May 2005. World Health Organization, 45 pp.
(http://www.euro.who.int/Document/AIQ/health_basis_AQ.pdf)

Note: The references have been reproduced as received by the secretariat.