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

Working Group on Effects

**REPORT ON THE TWENTIETH SESSION
OF THE WORKING GROUP ON EFFECTS**

Introduction

1. The twentieth session of the Working Group on Effects took place in Geneva from 29 to 31 August 2001.
 2. It was attended by representatives of the following Parties to the Convention: Austria; Canada; Czech Republic; Denmark; Finland; France; Germany; Hungary; Ireland; Italy; Netherlands; Norway; Poland; Russian Federation; Slovenia; Sweden; Switzerland; and the United Kingdom. A representative of the World Health Organization's European Centre for Environment and Health (WHO/ECEH), Bonn Office, was also present.
 3. The session was chaired by Mr. T. Johannessen (Norway).
- I. ADOPTION OF THE AGENDA
4. The Working Group adopted the agenda for its twentieth session (EB.AIR/WG.1/2001/1).

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II. ADOPTION OF THE REPORT OF THE NINETEENTH SESSION

5. The Working Group adopted the report of its nineteenth session, as contained in document EB.AIR/WG.1/2000/2.

III. MATTERS ARISING FROM THE EIGHTEENTH SESSION OF THE EXECUTIVE BODY FOR THE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION, THE THIRTY-SECOND SESSION OF THE WORKING GROUP ON STRATEGIES AND REVIEW AND THE TWENTY-FOURTH SESSION OF THE STEERING BODY OF THE COOPERATIVE PROGRAMME FOR MONITORING AND EVALUATION OF THE LONG-RANGE TRANSMISSION OF AIR POLLUTANTS IN EUROPE (EMEP)

6. Mr. K. Bull, the Chief of the Air and Water Team of the Environment and Human Settlements Division, reviewed the present status of the Convention and its Protocols and the relevant activities of the Executive Body and its subsidiary bodies. He drew attention to the discussions of, and the decisions taken by, the Executive Body at its eighteenth session (ECE/EB.AIR/71), in particular those concerning: (i) the important results recently achieved by the effect-oriented activities; (ii) the invitation to prepare a long-term strategy and medium-term work-plan for the effect-oriented activities; (iii) the need for a more integrated and health-oriented consideration of the effects of particulate matter, heavy metals (HMs) and persistent organic pollutants (POPs); (iv) the strengthened cooperation with other bodies/programmes within and outside the Convention (e.g. EMEP, in particular its Task Force on Integrated Assessment Modelling, the Clean Air for Europe (CAFE) programme of the European Commission); and (v) the financing of core activities.

7. The Working Group on Effects took note of the decisions made by the Executive Body and its Bureau, and of the results of the deliberations of other bodies under the Convention and agreed to bear them in mind when discussing its future activities.

IV. RESULTS AND SHORT-TERM GOALS OF THE EFFECT-ORIENTED ACTIVITIES

8. The Chairman introduced the annual 2001 Joint report of the International Cooperative Programmes (ICPs) and the Task Force on the Health Aspects of Air Pollution reviewing the progress in the effect-oriented activities as carried out by individual programmes (EB.AIR/WG.1/2001/3, annexes I-VII). He noted that the part of the report summarizing the cooperation of ICPs and the Task Force on the Health Aspects of Air Pollution with EMEP and other bodies/institutions within and outside the Convention would be discussed later, under common aspects of ICPs.

9. He drew attention to annex VIII to the report containing an outline for the 2004 substantive report on the assessment of present air pollution effects and their recorded trends, to be considered under agenda item 5 (c).

A. International Cooperative Programme (ICP) on assessment and monitoring of air pollution effects on forests

10. Mr. T. Haußmann (Germany), Chairman of the Task Force on ICP Forests, presented the progress report of the programme, including the results of the seventeenth meeting of the Task Force (EB.AIR/WG.1/2001/3, annex I) and plans for future activities. Thirty-eight countries now participated in the programme, which continued to be mainly focused on monitoring air pollution effects on forest ecosystems. He stressed the importance of the close cooperation with other ICPs and EMEP, as well as with other relevant projects and institutions for ensuring the efficient use of resources, and drew attention to the programme's activities outside Europe. He also referred to the recently published reports on forest conditions in Europe, intensive monitoring of forest ecosystems in Europe, integrative studies on forest ecosystem condition, and on atmospheric heavy metals and forest ecosystems. He noted the progress in drafting the report on the cause-effect relationships (in forest ecosystems) in cooperation with ICP Integrated Monitoring and in addressing the effects of ozone with ICP Vegetation.

11. Mr. M. Lorenz (Germany), Head of the Programme Coordinating Centre, introduced the summary report on the 2000 results of monitoring forest condition in Europe (EB.AIR/WG.1/2001/6) and provided additional detailed information on the latest results of the programme. Special mention was made of recent results from level II monitoring sites (including median deposition values for numerous elements and calculation of fluxes) and from level I monitoring sites (assessment of defoliation data).

12. In the ensuing discussion a number of delegations welcomed the substantial progress achieved in implementing the programme and appreciated its important results.

13. The Working Group on Effects:

(a) Took note of the report on the progress of ICP Forests (EB.AIR/WG.1/2001/3, annex I);

(b) Took note of the summary report on monitoring forest condition in Europe (EB.AIR/WG.1/2001/6);

(c) Took note of the progress in preparing the report on the cause-effect relationships in forest ecosystems and invited ICP Forests and ICP Integrated Monitoring to continue their cooperation in this area;

(d) Appreciated the progress in level II monitoring and in assessing and interpreting its results;

(e) Welcomed the cooperation between ICP Forests and ICP Vegetation in addressing problems related to the effects of ozone on vegetation and, in particular, in preparing a guidebook on the assessment of visible ozone damage on plant species.

B. ICP on assessment and monitoring of acidification of rivers and lakes

14. Ms. B. Kvaeven (Norway), Chairwoman of the Task Force on ICP Waters, summarized the recent achievements of the programme, including the results of the sixteenth meeting of the Task Force (EB.AIR/WG.1/2001/3, annex II). She stressed the importance of biological monitoring and noted that its results would provide substantial input to the future review of protocols to the Convention. She also underlined the need for intensified monitoring of heavy metals in surface waters and for a wider application of dynamic modelling. While reviewing the programme's recent reports, she noted the particular importance of the report on the assessment of trends and leaching of nitrogen at ICP Waters sites, and that on biological monitoring, which would be presented at the seventeenth meeting of the Task Force.

15. Ms. M. Johannessen Ulstein (Norway), Head of the Programme Centre, reviewed the present status of the programme, its ongoing activities and plans for its further development. To this end special mention was made of the importance of data/information on sulphur and nitrogen in surface waters and on observed trends, as well as on biological recovery. She drew attention to the recent report on trends in intercomparisons and its main conclusions. She also noted the preparations for the workshop on monitoring and biological impacts of heavy metals (Pb, Cd and Hg) in surface waters, to be held from 18 to 20 March 2002 in Lillehammer (Norway).

16. Ms. B.-L. Skjelkvåle (Norway), Project Manager, provided more detailed information on the content and the most important findings and conclusions of the reports on the assessment of trends and leaching of nitrogen at ICP Waters sites, and on the effect of year-to-year variations in climate on trends in acidification.

17. A number of delegations expressed their appreciation for the high quality of the scientific work, welcomed the close cooperation with other programmes including EMEP and underlined the importance of continuing the long-term monitoring and the intercalibration exercises.

18. The Working Group:

- (a) Took note of the report on the progress of ICP Waters (EB.AIR/WG.1/2001/3, annex II);
- (b) Took note of the technical report on the assessment of trends and leaching of nitrogen at ICP Waters sites (EB.AIR/WG.1/2001/7);
- (c) Took note of the report on the effect of year-to-year variations in climate on trends in acidification;
- (d) Took note of the report on trends in intercomparisons (1987-1998) and of the results of the 2000 intercalibration exercise;
- (e) Noted with appreciation of the progress in developing the programme's monitoring network and its database with emphasis on biological data;

(f) Welcomed the programme's preparations for the workshop on monitoring and biological impacts of heavy metals in surface waters and the offer of Norway to host it.

C. ICP on effects of air pollution on materials, including historic and cultural monuments

19. Mr. V. Kucera (Sweden), Chairman of the Task Force on ICP Materials, introduced the progress report of the programme, including the results of the seventeenth meeting of the Task Force (EB.AIR/WG.1/2001/3, annex III), and noted the preparation and adoption of the revised chapter on materials in the Mapping Manual. He provided more detailed information concerning: (i) the present status and ongoing activities of the multi-pollutant exposure programme; (ii) mapping activities; and (iii) plans for the further development of the programme. Special mention was made of the new MULTI ASSESS project, which would start in 2002 and be funded by the European Union (EU). He also presented the proceedings of the workshop on mapping air pollution effects on materials, including stock at risk (Stockholm, 2000), and a new brochure describing ICP Materials and its activities.

20. He also introduced the report on the results after one and two years of exposure in the multi-pollutant programme and mapping air pollution effects on materials (EB.AIR/WG.1/2001/8), reviewed its main findings, and drew attention to a number of technical reports recently published by the programme and its sub-centres.

21. In the ensuing discussion a number of delegations appreciated the important results of the well-focused activities of the programme. They also stressed the importance of further work on the assessment of stock at risk and on problems related to cultural heritage.

22. The Working Group:

(a) Took note of the report on the progress of ICP Materials (EB.AIR/WG.1/2001/3, annex III);

(b) Took note of the report on the results after one and two years of exposure in the multi-pollutant programme and mapping air pollution effects on materials (EB.AIR/WG.1/2001/8);

(c) Took note of the progress in activities of programme sub-centres, as presented in technical reports No. 35-39, and in the development of a database of environmental data for the multi-pollutant programme (No. 40);

(d) Noted that the chapter on the mapping of air pollution effects on materials in the Mapping Manual had been revised and recommended its region-wide application, in cooperation with ICP Mapping and the Coordination Centre for Effects (CCE), as a preparation for including these effects into integrated assessment modelling;

(e) Noted that further work was needed on the assessment of stock at risk in general and of cultural heritage in particular;

(f) Invited national focal centres (NFCs) to carry out the necessary mapping work at national level and to provide data for stock at risk and cultural heritage.

D. ICP on effects of air pollution on natural vegetation and crops

23. Ms. G. Mills (United Kingdom), Chairwoman of the Task Force on ICP Vegetation, presented the progress report of the programme including the results of the fourteenth meeting of the Task Force (EB.AIR/WG.1/2001/3, annex IV) and the 2001 annual status report of ICP Vegetation. She also introduced the technical report on the effects of ozone on natural vegetation including requirements for level II modelling and mapping (EB.AIR/WG.1/2001/9) and reported on progress in the European moss survey.

24. She provided more detailed information on the programme's activities and recent results concerning: (i) the effects of ozone on vegetation; (ii) the economic assessment of losses due to ozone; and (iii) the effects of heavy metals. She reviewed the progress achieved in developing level II critical levels for ozone, with special reference to the ongoing broad scientific cooperation aimed at deriving critical fluxes of ozone. She also provided information about the EU-funded BIOSTRESS project (Biodiversity in herbaceous semi-natural ecosystems under stress by global change components) and noted that it would generate substantial knowledge on the responses of natural vegetation to ozone.

25. In the ensuing discussion a number of delegations expressed appreciation for the work already done by the programme and welcomed its impressive recent results. Several delegations stressed the importance of close cooperation with EMEP and ICPs Forests, Integrated Monitoring, and Mapping.

26. The Working Group:

(a) Took note of the report on the progress of ICP Vegetation (EB.AIR/WG.1/2001/3, annex IV) and the programme's 2001 annual status report;

(b) Took note of the technical report on the effects of ozone on natural vegetation including requirements for level II modelling and mapping (EB.AIR/WG.1/2001/9);

(c) Noted with appreciation the recent results of experiments on the effects of ambient ozone episodes on crops and natural vegetation;

(d) Welcomed the progress in determining the critical flux for effects of ozone;

(e) Took note of the plans to address nutrient nitrogen;

(f) Welcomed the progress in assessing economic losses due to ozone;

(g) Took note of the recent results of evaluating deposition of heavy metals and implementing the European moss survey.

E. ICP on integrated monitoring of air pollution effects on ecosystems

27. Mr. L. Lundin (Sweden), Chairman of the Task Force on ICP Integrated Monitoring, reviewed the programme activities since the nineteenth session of the Working Group including the results of the ninth meeting of the Task Force (EB.AIR/WG.1/2001/3, annex V). With reference to the objectives of the programme he summarized its recent results and future plans. Special mention was made of the activities addressing: (i) nitrogen and eutrophication; (ii) trends in pH, base cations, sulphur and nitrogen; (iii) bioindicators; (iv) dynamic modelling; and (v) the impact of climate change. He also stressed the importance of even closer cooperation with other ICPs, EMEP and relevant projects/institutions outside the framework of the Convention.

28. Mr. M. Forsius (Finland), Head of the Integrated Monitoring Programme Centre, introduced the programme's tenth annual report (2001), including progress reports on the assessment of heavy metals, modelling understorey vegetation at the continental scale, assessment and modelling of S and N compound effects, and dynamic modelling of surface water and soil. He stressed the importance of the work carried out by the national focal points (NFPs). He also summarized the programme's cooperation with other international organizations/bodies in addressing global environmental issues and noted that much of the data gathered by activities under the Convention would be useful also for other conventions/programmes/projects and vice versa and that close international cooperation was mutually beneficial. He specifically mentioned the following projects: (i) Carbon and nitrogen interaction in forest ecosystems (CNTER); (ii) Climate- induced variations of dissolved organic carbon in Nordic surface waters (NMOTOC); and (iii) Towards integrated monitoring in Europe for the Global Terrestrial Observing System (TIME for GTOS). He also noted that ICP Integrated Monitoring intended to participate in the Biosphere Reserve Integrated Monitoring (BRIM) project.

29. In the ensuing discussion the Working Group welcomed the recent results of the programme activities and noted with appreciation the close cooperation of ICP Integrated Monitoring and its NFPs with other programmes and EMEP, as well as the programme's successful participation in a number of other international programmes/projects.

30. The Working Group on Effects:

(a) Took note of the report on the progress of ICP Integrated Monitoring (EB.AIR/WG.1/2001/3, annex V);

(b) Took note of the programme's tenth annual report 2001;

(c) Took note of the progress in the assessment of recovery at selected ICP Integrated Monitoring sites;

(d) Appreciated the results of the programme's active participation in international projects addressing global environmental issues and invited it to keep the Working Group and its Bureau informed of the new developments.

F. ICP on Mapping of critical levels and loads

31. Mr. H.-D. Gregor (Germany), Chairman of the Task Force on ICP Mapping, reviewed the recent activities of the programme (EB.AIR/WG.1/2001/3, annex VI), and provided more detailed information on the discussions held and decisions taken at the seventeenth meeting of the Task Force. He stressed, in particular, the progress achieved in: (i) revising the chapter on materials of the Mapping Manual; (ii) revising its chapter on level I critical levels for ozone; (iii) activities aimed at deriving critical limits for heavy metals and mapping critical loads of Pb and Cd; and (iv) the development of methodologies and the broader application of dynamic modelling. He also summarized ICP Mapping plans for further developing its activities and presented its medium-term work-plan. He noted that full implementation of these plans would require close cooperation with other ICPs and EMEP, including the provision of data and information.

32. Mr. Gregor also presented information on the outcome of: (i) the training workshop on dynamic modelling for east European and Mediterranean countries (Zagreb, February 2001); and (ii) the subregional training workshop on critical load calculations for air pollutants and mapping in east and south-east Europe (Chisinau, March 2001).

33. In response to the comments made by the Executive Body at its eighteenth session and the discussions at the seventeenth meeting of the Task Force on ICP Mapping, he proposed to change the name of the programme to: ICP on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends.

34. Mr. J.-P. Hettelingh (Netherlands), Head of the Coordination Center for Effects (CCE), presented the main results of the past year's work and summarized the outcome of the eleventh CCE workshop on modelling and mapping (Bilthoven, Netherlands, April 2001), and introduced the CCE status report 2001. He reviewed, in particular: (i) the results of the call for updated critical load data and the subsequent preparation of updated maps; (ii) the progress achieved in critical loads data verification and quality assurance, and in uncertainty analysis; (iii) the development of dynamic modelling, including the preparation of a draft dynamic modelling manual; and (iv) efforts to harmonize ecosystem definitions.

35. In the ensuing discussion the Working Group expressed its high appreciation for the array of tasks accomplished and the quality and importance of results achieved by the programme and CCE. Several delegations suggested that the programme should begin compiling without any delay national data on critical loads of heavy metals and their mapping on a regional level, while some delegations felt that this exercise should be seen only as a contribution to the further development and testing of relevant methodologies.

36. A number of delegations voiced their satisfaction with the work and results of the expert group on dynamic modelling, chaired by Mr. A. Jenkins (United Kingdom), and stressed the need to continue these activities. The representative of the United Kingdom informed the Meeting that her Government would provide the necessary support to the present Chairman of the group to allow him to continue his functions. The representative of Sweden offered to host future meetings of the expert group on dynamic modelling. The Working Group, while appreciating these offers, stressed that experts from all programmes should actively participate in the work and that this should also be reflected in its name: Joint Expert Group on Dynamic Modelling.

37. The Working Group on Effects:

(a) Took note of the report on the progress of ICP on Mapping Critical Levels and Loads and the Coordination Center for Effects including the results of the eleventh CCE workshop (EB.AIR/WG.1/2001/3, annex VI);

(b) Took note of the new European critical loads data set and maps, while noting that several Parties intended to revise further their critical loads in the coming years;

(c) Took note of the outcome of: (i) the training workshop on dynamic modelling for east European and Mediterranean countries (Zagreb, February 2001); and (ii) the subregional training workshop on critical load calculations for air pollutants and mapping in east and south-east Europe (Chisinau, March 2001);

(d) Noted with appreciation the development of the programme's activities, in particular in: (i) addressing critical loads data quality and comparability; (ii) deriving critical limits for heavy metals; and (iii) the application of dynamic modelling;

(e) Welcomed the publication of the CCE status report 2001 on modelling and mapping of critical thresholds in Europe;

(f) Noted the need to further develop and test the methodology for mapping critical loads for heavy metals (Pb, Cd) and, to this end, invited ICP Mapping and CCE to issue, by the end of 2001, a call for relevant data to be provided by NFCs on a voluntary basis;

(g) Stressed the essential importance of continuing the activities of the expert group on dynamic modelling and noted with appreciation that its work greatly benefitted from the active participation of experts representing other programmes/subsidiary bodies under the Convention. It agreed to reflect this fact in the name of the group - the Joint Group of Experts on Dynamic Modelling - and requested it to report its results directly without any delay to all ICPs and, if appropriate, to the Working Group on Effects;

(h) Welcomed the offer of the United Kingdom to provide the necessary support to the present Chairman of the Joint Expert Group on Dynamic Modelling, Mr. A. Jenkins, to allow him to continue to chair the group, and the offer of Sweden to host its future meetings;

(i) Invited the Chairman of the Working Group to bring to the attention of the Steering Body of EMEP at its forthcoming session the data and information urgently needed for the modelling and mapping tasks requested by the Executive Body;

(j) Noted the programme's work-plan and stressed the importance of all Parties to the Convention actively participating in the programme's activities;

(k) Agreed to propose to the Executive Body to change the name of the programme to: ICP on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends.

G. Task Force on the Health Aspects of Air Pollution

38. Mr. M. Krzyzanowski, representative of the European Centre for Environment and Health of the World Health Organization (WHO/ECEH), Bonn Office, and Chairman of the Task Force on the Health Aspects of Air Pollution, reviewed the activities of the Task Force (EB.AIR/WG.1/2001/3, annex VII). He pointed out the difficulties that the Task Force had recently experienced due to the organizational changes at WHO/ECEH and its relocation from Bilthoven to Bonn. He provided information on progress in finalizing the report on the preliminary assessment of the potential health effects of selected heavy metals and in preparing the similar preliminary assessment of selected POPs. He also described the plans to continue work on the health effects of particulate matter and noted that this activity would be carried out in close cooperation with CAFE and funded by the European Union. Possibilities for closer cooperation with the Government of the Netherlands and its National Institute for Public Health and the Environment (RIVM) in this area were under consideration.

39. He informed the Working Group that the postponed fourth meeting of the Task Force would now be held from 3 to 4 December 2001 in Bonn and that the fifth meeting was tentatively planned for May 2002. He stressed the importance of active cooperation with EMEP and ICPs and the need for more national experts to participate in the work of the Task Force.

40. In the ensuing discussion a number of delegations expressed their satisfaction with the impressive results achieved by the Task Force despite the rather difficult circumstances and noted with appreciation the continuing work on the assessment of the health risks of heavy metals and persistent organic pollutants. Several delegations stressed the need for further work on particulate matter, especially to develop indicators/criteria for the Task Force on Integrated Assessment Modelling.

41. The Working Group on Effects:

(a) Took note of the report on the activities of the Task Force (EB.AIR/WG.1/2001/3, annex VII);

(b) Noted the preparations for the fourth meeting of the Task Force (Bonn, 3-4 December 2001);

- (c) Invited the Task Force to continue assessing the health risks of particulate matter;
- (d) Reiterated its invitation to all interested countries to nominate experts and actively participate in the work of the Task Force;
- (e) Welcomed the continuing leading role of the WHO European Centre for Environment and Health, Bonn Office in the Task Force's activities.

H. Common aspects of the International Cooperative Programmes

42. The Chairman introduced the discussion on the cooperation of the International Cooperative Programmes (ICPs) and the Task Force on the Health Aspects of Air Pollution with EMEP and other bodies/institutions within and outside the Convention.

43. The Working Group on Effects:

(a) Noted with appreciation the continuing development of the International Cooperative Programmes and the Task Force on the Health Aspects of Air Pollution and their focus on priority tasks supporting effective implementation of the Convention;

(b) Stressed that effective cooperation among the programmes, task forces and coordinating centres under the Working Group on Effects, their close collaboration with EMEP, the development of close links with relevant institutions and organizations outside the Convention and the active participation in their projects, were essential for the effect-oriented activities. These links should be further strengthened;

(c) Reiterated the importance of the work carried out by the national focal centres and of the support provided by the lead countries and coordinating centres;

(d) Stressed the importance of the active participation of all Parties to the Convention in the effect-oriented activities for providing the sound knowledge and high-quality representative data required for effective implementation and future reviewing of the Convention and its protocols;

(e) Stressed the importance of continuing to communicate the results and findings of the effect-oriented activities to the scientific community, policy makers and the general public on both national and international levels;

(f) Stressed the need for maintaining the adequate financing of activities of the national focal centres and international coordination of the effect-oriented activities;

(g) Again drew attention to the relevant provisions of the Convention, in particular to article 7 (d) requiring Parties to conduct cooperative research on the effects of sulphur compounds and other major air pollutants on human health and the environment, and to article 8 (f) inviting Parties to exchange available information on physico-chemical and biological data relating to the effects of long-range transboundary air pollution and the extent of the damage.

V. CONTRIBUTION OF THE EFFECT-ORIENTED ACTIVITIES TO THE EFFECTIVE IMPLEMENTATION OF THE CONVENTION

44. The Chairman drew the attention of the Working Group to the ongoing preparations for the future reviewing of protocols to the Convention. He noted that the Executive Body at its eighteenth session had invited the Working Group on Effects to elaborate its long- and medium-term plans for the effect-oriented activities and to consider possible ways and means for effectively contributing to the implementation of the Convention and to reviewing its protocols.

A. Draft long-term strategy of the effects-oriented activities

45. The Chairman introduced the draft long-term strategy of the effects-oriented activities (EB.AIR/WG.1/2001/4) prepared by the Bureau of the Working Group on Effects in collaboration with the secretariat, outlining the aims of the international scientific and research cooperation in studying and assessing the effects of air pollution within the framework of the Convention till 2010. He invited the Working Group to consider and amend the draft long-term strategy, and to suggest future priorities for the effect-oriented activities and methods of work, taking into consideration recent decisions of the Executive Body.

46. In the ensuing discussion a number delegations, while welcoming the document, noted that in its present form it would be more suitable for the Executive Body and its subsidiary bodies than for the general public. Several delegations stressed the need for further work on risk assessment. They also pointed out that the term “risk of effects” was misleading and should be avoided. To this end the Working Group amended document EB.AIR/WG.1/2001/4 as follows:

In paragraphs 11 and 12,

For risks of effects substitute probability of effects

47. The Working Group on Effects:

(a) Approved the long-term strategy of the effects-oriented activities (EB.AIR/WG.1/2001/4) as amended and decided to submit it to the Executive Body;

(b) Agreed to bear it in mind when considering plans for its future activities, and invited all programmes to do likewise.

B. Draft medium-term work-plan for the further development of the effects-oriented activities

48. The Chairman introduced the draft medium-term plan for the further development of the effect-oriented activities for 2002-2004 (EB.AIR/WG.1/2001/5) aimed at updating scientific knowledge and data on the current state and trends in the quality of the environment and on the effects of selected air pollutants, in support of any future review/revision of the existing protocols to the Convention.

49. The Working Group noted that the draft medium-term work-plan was ambitious and demanding. Several delegations addressed, in particular, its consistency with the known plans of the Executive Body and its other subsidiary bodies and possibilities (resources) of individual programmes to implement it effectively. Some delegations urged the Working Group to speed up its activities to derive critical limits for heavy metals and produce European maps of critical loads, while others voiced their reservations about such proposals. It was also noted that more attention should be devoted to deriving data and mapping stock at risk and that developing dynamic models, in particular for nutrient nitrogen, might require more time than anticipated in the plan. With reference to the plans for 2002 it was pointed out that, while results of dynamic modelling on a European scale for acidification could consist of regional studies, it was not realistic to expect results for nutrient nitrogen on a European scale.

50. The Working Group amended document EB.AIR/WG.1/2001/5 as follows:

(a) In paragraph 8, as a new task for 2002 insert Inventory of present methods and data and proposals for concerted action for the assessment of stock of materials at risk, including cultural monuments;

(b) In paragraph 11, the fourth task for 2003 should read Evaluating critical loads and dynamic models at ICP Forests sites (in collaboration with ICP Forests and ICP Integrated Monitoring);

(c) In the table annexed to document EB.AIR/WG.1/2001/5, in the column "Acidity", the first task for 2003 should read Evaluating of critical loads and dynamic models at ICP Forests sites (F, MAP).

51. The Working Group on Effects:

(a) Approved in principle the draft medium-term work-plan for the further development of the effects-oriented activities (EB.AIR/WG.1/2001/5) as amended, and decided to submit the draft to the Executive Body;

(b) Invited delegations to provide the secretariat with their comments and additional proposals and requested the secretariat to summarize them and to transmit them to the Bureaux of the Working Group on Effects and the Executive Body for further consideration;

(c) Invited all Task Forces to consider the practical implementation of the agreed medium-term work-plan at their next meeting, and to report back to it the results achieved, as well as any problems, and encountered or envisaged delays.

C. Draft outline of the report on the assessment of present air pollution effects and their recorded trends

52. The Chairman introduced the draft outline of the report on the assessment of present air pollution effects and their recorded trends (EB.AIR/WG.1/2001/3, annex VIII). He noted that the Bureau of the Working Group on Effects had suggested considering preparing this substantive

report for presentation to the Executive Body in 2004 as its contribution to and technical support for the expected review/revision of the existing protocols to the Convention.

53. In the ensuing discussion a number of delegations expressed their appreciation for the well-prepared outline of the substantive report, which would provide to the Executive Body important scientific substantiation for any future reviewing of protocols. They noted, however, that the required inputs substantially surpassed the scope of results and information which the ongoing or planned effect-oriented activities might produce by 2003-2004. The additional resources required for the preparation of such a comprehensive report could be considerable.

54. The Working Group welcomed the information that EMEP and its Task Force on Measurement and Modelling had already initiated the preparation of a report on the assessment of changes in transboundary fluxes. It noted the need for close cooperation in these related activities.

55. The Working Group agreed to amend the outline (EB.AIR/WG.1/2001/3, annex VIII) as follows:

Paragraph 1.

The end of the penultimate sentence should read heavy metals, persistent organic pollutants and particulate matter.

56. The Working Group:

(a) Approved in principle the draft outline of the report on the review and assessment of present air pollution effects and their recorded trends (EB.AIR/WG.1/2001/3, annex VIII) as amended, and decided to submit it as a tentative proposal to the Executive Body for information, on the understanding that future action would depend on available resources;

(b) Invited delegations to provide the secretariat with their comments and additional suggestions and requested the secretariat to summarize them and to transmit them to the Bureau of the Working Group on Effects for further consideration;

(c) Invited all Task Forces to consider the draft outline at their next meeting and draw up proposals for their particular contributions to the substantive report, and to include their further elaboration in their plans for future activities;

(d) Requested the Bureau to summarize and assess the possible contributions of individual programmes and to prepare for the next session of the Working Group detailed alternative proposals for the preparation of the substantive report.

VI. EFFECTS OF HEAVY METALS: REVIEW OF ONGOING ACTIVITIES AND THEIR RESULTS

57. The Chairman introduced document EB.AIR/WG.1/2001/10, reviewing the occurrence, movement and effects of selected heavy metals, compiled by the Bureau of the Working Group.

He noted that due to a lack of resources it was not possible to synthesize the information provided by the programmes into an integrated, well-balanced substantive report on heavy metals problems, as originally agreed by the Working Group on Effects (EB.AIR/WG.1/2000/2, para. 67 (a)).

58. The Bureau of the Working Group had welcomed the important work already done by ICPs and the Task Force on the Health Aspects of Air Pollution in summarizing recent data and results, and in assessing new knowledge and information on heavy metals and their effects, and encouraged them to publish their reports separately and to make them available to the Working Group on Effects.

59. In the ensuing discussion several delegations noted with satisfaction the work already done by the individual programmes. It was noted, however, that comprehensive assessment of the health and environmental effects of heavy metals required continuous attention.

60. Special mention was made of the fact that the term “precautionary principle” should be avoided -still approach” (e.g. EB.AIR/WG.1/2001/10, annex VI, para. 5). It was also agreed that it would be useful to prepare a short summary of the document, synthesizing and assessing the information and data provided on the environmental and health effects of selected heavy metals from long-range transport.

61. The Working Group:

(a) Approved the summary report on the occurrence, movement and effects of selected heavy metals (EB.AIR/WG.1/2001/10) as amended, and requested its Bureau to synthesize and assess the reported environmental and health effects of heavy metals from long-range transport;

(b) Welcomed the important work already done by ICPs and the Task Force on the Health Aspects of Air Pollution in summarizing recent data and results and in assessing new knowledge and information on heavy metals and their effects and invited them to publish their reports separately and to make them available to the Working Group on Effects.

VII. REVIEW OF SCIENTIFIC AND TECHNICAL KNOWLEDGE

A. Dynamic modelling

62. Mr. A. Jenkins (United Kingdom), Chairman of the Joint Expert Group on Dynamic Modelling, reviewed the results of the first meeting of the group (Ystad, October 2000) as summarized in document EB.AIR/WG.1/2001/11. Special mention was made of the discussions concerning: (i) the role of dynamic modelling (including assessment of recovery, evaluation of monitoring programmes and trends, development and application of models, e.g. for nutrient nitrogen); (ii) possible strategies for developing and applying models (including active participation of ICPs, individual countries, collaboration with EMEP and the Centre for Integrated Assessment Modelling (CIAM)); and (iii) plans for future activities. He also noted that the second meeting of the Joint Expert Group on Dynamic Modelling would again be hosted by Sweden in Ystad in November 2001, and outlined its main objectives.

63. In the following discussion a number of delegations stressed the importance of dynamic modelling for the work under the Convention in general and for the effect-oriented activities in particular. They also expressed their satisfaction with the activities and the results already achieved by the Expert Group. Several delegations noted that setting unrealistic plans for developing dynamic models, in particular for nutrient nitrogen, might be detrimental to future work. Some delegations expressed their support for the continuing development of the biological response model.

64. The Working Group:

(a) Took note of the report of the Joint Expert Group on Dynamic Modelling (EB.AIR/WG.1/2001/11) and approved its conclusions and recommendations;

(b) Noted with appreciation the efficient work of the Group and reiterated its invitation to all ICPs and the Task Force on the Health Aspects of Air Pollution to participate actively in its work;

(c) Stressed its expectation that all participating programmes, task forces, groups and experts would do their utmost to efficiently share information and data;

(d) Welcomed the offer of Sweden to host the second meeting of the Joint Expert Group on Dynamic Modelling (Ystad, 6-8 November 2001).

B. Effect-based critical limits for heavy metals

65. Mr. H.-D. Gregor (Germany), Co-chairman of the ad hoc expert group on effect-based critical limits for heavy metals, summarized the main conclusions of the meeting held in Bratislava in October 2000 and introduced its proceedings. Special mention was made of the critical levels suggested for critical load assessment. He drew attention to the definitions proposed for: (i) the precautionary principle; (ii) maximum accepted damage; and (iii) the stand-still approach. He also outlined plans for further activities.

66. In the following discussion the Working Group appreciated the results of the ad hoc expert group while noting that important problems remained to be addressed. Several delegations suggested that both the expert group and ICP on Mapping should revisit these definitions, in particular with regard to the precautionary principle, and try to harmonize methodologies for deriving critical loads. Due attention should be given to the ongoing activities of the European Union to derive harmonized limits for heavy metals, in particular those that are human-health-oriented. More work was needed on limits concerning ecosystems. It was also suggested that there was a need to develop further mass balance models and address deposition fluxes.

67. The Working Group:

(a) Took note of the important results of the meeting of the ad hoc expert group on effect-based critical limits for heavy metals and welcomed the publication of its proceedings;

- (b) Noted the need to further develop effect-based approaches for heavy metals, in particular towards improving the harmonization of critical limits and transfer functions;
- (c) Invited delegations to provide their additional comments to the Task Force on ICP Mapping;
- (d) Stressed the need to take full account of all available information, including the results of ongoing activities outside the Convention;
- (e) Encouraged National Focal Centres (NFCs) to use the short guidance for the calculation of critical loads of Cd, Pb, and Hg;
- (f) Invited ICP Mapping to assess the compatibility/comparability of national data, in view of their possible future use for preparing European maps of critical loads for heavy metals;
- (g) Stressed the need for the continuing development of critical load approaches for heavy metals.

C. Chemical criteria and critical limits for steady-state and dynamic modelling

68. Mr. A. Jenkins introduced the summary report of the workshop on chemical criteria and critical limits (York, United Kingdom, March 2001) (EB.AIR/WG.1/2001/13) and pointed out, in particular, its conclusions and recommendations for revising some chemical criteria and critical limits included in the Mapping Manual. He noted that the full report of the workshop would soon be available via the United Kingdom National Focal Centre web site (<http://critloads.ceh.ac.uk>). He also presented plans for future activities in this area.

69. In the following discussion the Working Group stressed the importance of updating the scientific basis for the base cation to aluminium ratio for calculating critical loads for acidity. Several delegations stressed the importance of including biodiversity, climate and human health criteria in further developing the critical load approach and suggested including biodiversity as a criterion into the Mapping Manual. It was recognized that more work should be done in these areas.

70. The delegation of Switzerland informed the Working Group of the plan to organize the expert workshop on empirical critical loads for nitrogen deposition on (semi-)natural ecosystems in Bern in November 2002.

71. The Working Group:

- (a) Took note of the summary report of the workshop on chemical criteria and critical limits (EB.AIR/WG.1/2001/13), approved its conclusions and recommendations, and welcomed the publication of the proceedings on the Internet;

(b) Requested ICP Mapping to introduce the proposed changes and additions into the Mapping Manual;

(c) Invited ICP Mapping to consider the need for reviewing the base cation to aluminium ratios used for calculating critical loads and for further considering biodiversity, climate and human health criteria in the critical load approach;

(d) Welcomed Switzerland's offer to host the expert workshop on empirical critical loads for nitrogen deposition on (semi-)natural ecosystems in Bern in November 2002.

D. Atmospheric heavy metals and forest ecosystems

72. Mr. M. Lorenz introduced the substantive report on atmospheric heavy metals and forest ecosystems, reviewing the available data and current state of knowledge. He summarized its main findings concerning, in particular, available level I and level II foliar and forest soil heavy metal data, as well as level II flux data.

73. The Working Group:

(a) Took note of the substantive report on atmospheric heavy metals and forest ecosystems;

(b) Expressed its appreciation to ICP Forests and the programme's lead country for the preparation and publication of the report.

VIII. FINANCING OF EFFECT-ORIENTED ACTIVITIES

74. The secretariat introduced a note on funding of the effect-oriented activities, prepared by the Bureau of the Working Group in collaboration with the secretariat (EB.AIR/WG.1/2001/14), and presented its updated tables showing the recent development in the Trust Fund (see tables 1, 2 and 3 below). It drew attention to the relevant decisions of the Executive Body at its eighteenth session, in particular those concerning the financing of the core activities other than those covered by the EMEP Protocol (ECE/EB.AIR/71, paras. 28-41, 90- 91 and annex III).

75. The Acting Chairman of the Working Group reiterated the importance of the substantial financial support continuously provided by all lead countries of the programmes and by countries hosting the programme centres, and/or organizing task force meetings and workshops.

76. Mr. R. Ballaman, Chairman of the Working Group on Strategies and Review, drew attention to the negotiations on a funding instrument that would commence at the thirty-third session of the Working Group on Strategies and Review in late September 2001. He recommended that delegations should make an effort to brief their national representatives at the Working Group on Strategies and Review to ensure that they were fully aware of the need for a secure funding mechanism, especially when considering the highly ambitious future work.

77. The delegation of Switzerland informed the Meeting that it had recently transferred to the Trust Fund 2001 a voluntary contribution earmarked for ICP Forests as well as a non-earmarked contribution of SwF 40,000. Switzerland also provided direct financial support to the WHO European Centre for Environment and Health, Bonn Office, amounting to SwF 35,000 in 2001, SwF 25,000 in 2002 and SwF 25,000 in 2003.

78. The Working Group:

(a) Approved the note on the funding of the effect-oriented activities (EB.AIR/WG.1/2001/14) as amended and decided to submit it to the Executive Body;

(b) Reiterated its appreciation for the essential support provided to the Working Group on Effects and its effect-oriented activities by lead countries, countries hosting coordinating centres and organizing meetings, and countries funding activities of their NFCs and the active participation of their national experts in the work under the Convention;

(c) Welcomed the information from Switzerland concerning its substantial voluntary contributions to the funding of the effect-oriented activities under the Convention;

(d) Reiterated its invitation to all Parties that had not yet done so to consider providing voluntary contributions to the Trust Fund for financing the effect-oriented activities without undue delay.

79. The secretariat informed the Working Group that voluntary contributions in United States dollars should be sent to:

Account Number: 485-001802
Bank Name: J.P. Morgan Chase Bank, New York
Account Title: UNOG General Fund
Address: International Agencies Banking
1166, Avenue of the Americas, 17th Floor
New York, N.Y. 10036-2708, USA
ABA: 021000021 (US Banking Code)
Reference: For the credit of "LUA-ECE/EOA TRUST FUND"
Allotment account No.: LUC-25-270

80. These contributions should be clearly earmarked and indicate the year for which they are made and the specific programme/coordinating centre (if applicable).

81. Alternatively, contributions may also be made by cheque made payable to "UN Economic Commission for Europe", clearly earmarked as indicated above, and addressed to:

Executive Office (Office 333)
Office of the Executive Secretary
Economic Commission for Europe
Palais des Nations
1211 Geneva 10

82. Whatever the method of payment, a communication should be sent to UNECE, specifying the amount contributed, the date and purpose of the payment.

IX. ELECTION OF OFFICERS

83. Mr. H.-D. Gregor (Germany) was elected Chairman. Mr. B. Achermann (Switzerland), Mr. V.N. Bashkin (Russian Federation), Mr. G. Fenech (Canada), Mr. R. Guardans (Spain) and Mr. T. Johannessen (Norway) were re-elected Vice-Chairmen.

84. The Working Group appreciated the important contribution of its Bureau to the recent impressive results and expressed, in particular, its gratitude to Mr. T. Johannessen for his work as Acting Chairman. It also expressed its full support to the newly elected Chairman.

85. The Working Group noted that to meet all its future demanding tasks the Bureau may need to invite other experts to participate in its work.

X. OTHER BUSINESS

86. The secretariat presented a provisional list of meetings for 2001/2002 (annex) and invited all Parties and programmes to communicate to it any amendments or new information.

87. The secretariat also provided information about the web pages of the Executive Body (<http://www.unece.org/env/eb>) and the Working Group on Effects (<http://www.unece.org/env/wge>).

88. The Chairman informed the Working Group that its twenty-first session was tentatively scheduled to be held from 28 to 30 August 2002, starting on Wednesday, 28 August 2002 at 10 a.m.

Table 1. 2000 voluntary cash contributions towards financing the essential international coordination of the effect-oriented activities (in US\$) (as recorded on 31 August 2001) (Corrigendum to EB.AIR/WG.1/2001/14, table 2)

	ICP F	ICP W	ICP M	ICP V	ICP IM	ICP MAP	HEALTH	EOA-GEN	TOT.CONTR
Armenia									-
Austria	4,770								4,770
Belarus									-
Belgium-Flanders									-
Belgium-Brussels									-
Belgium-Wallonia	1,681								1,681
Bosnia and Herzegovina									-
Bulgaria									-
Canada								13,014	13,014
Croatia									-
Cyprus								1,000	1,000
Czech Republic	1,500								1,500
Denmark									-
Estonia									-
Finland	1,605								1,605
France	17,216							39,200	56,416
Georgia									-
Germany	27,705								27,705
Greece									-
Holy See									-
Hungary	675							4,283	4,958
Iceland									-
Ireland								6,890	6,890
Italy									-
Kyrgyzstan									-
Latvia									-
Liechtenstein									-
Lithuania									-
Luxembourg	150								150
Malta									-
Monaco									-
Netherlands						51,038			51,038
Norway		16,909							16,909
Poland	2,130								2,130
Portugal	450								450
Republic of Moldova									-
Romania									-
Russian Federation									-
San Marino									-
Slovakia	790								790
Slovenia	300								300
Spain									-
Sweden	3,990								3,990
Switzerland	3,390							24,390	27,780
The FYR of Macedonia									-
Turkey									-
Ukraine									-
United Kingdom									-
United States									-
Yugoslavia									-
European Community	4,995							64,313	69,308
TOTAL 2000 CONTR.	71,347	16,909	-	-	-	51,038	-	153,090	292,384

Table 2. 2001 voluntary cash contributions towards financing the essential international coordination of the effect-oriented activities (in US\$) (as recorded on 31 August 2001) (Corrigendum to EB.AIR/WG.1/2001/14, table 3)

	ICP F	ICP W	ICP M	ICP V	ICP IM	ICP MAP	HEALTH	EOA-GEN	TOT.CONTR
Armenia									-
Austria									-
Belarus									-
Belgium-Flanders	1,681								1,681
Belgium-Brussels									-
Belgium-Wallonia	1,681								1,681
Bosnia and Herzegovina									-
Bulgaria									-
Canada									-
Croatia	225								225
Cyprus								1,000	1,000
Czech Republic	1,492							3,846	5,338
Denmark									-
Estonia									-
Finland									-
France									-
Georgia									-
Germany									-
Greece									-
Holy See									-
Hungary	675							4,825	5,500
Iceland									-
Ireland									-
Italy									-
Kyrgyzstan									-
Latvia									-
Liechtenstein	30							215	245
Lithuania									-
Luxembourg									-
Malta									-
Monaco									-
Netherlands						43,312			43,312
Norway	1,695	16,909							18,604
Poland	2,122							7,046	9,168
Portugal	450								450
Republic of Moldova									-
Romania									-
Russian Federation									-
San Marino									-
Slovakia									-
Slovenia	150							2,193	2,343
Spain									-
Sweden			77,598		13,694				91,292
Switzerland									-
The FYR of Macedonia									-
Turkey									-
Ukraine									-
United Kingdom									-
United States									-
Yugoslavia									-
European Community	4,995								4,995
TOTAL 2001 CONTR.	15,196	16,909	77,598	-	13,694	43,312	-	19,125	185,834

**Table 3. Use of voluntary cash contributions to partially fund the effect-oriented activities in 1999, 2000 and 2001 (as of 31 August 2001) (in US\$)
(Corrigendum to EB.AIR/WG.1/2001/14, table 4)**

CONTRIBUTIONS	EARMARKED			NON-EARMARKED		
	1999	2000	2001	1999	2000	2001
ICP FORESTS	64,000	84,000	66,000 ^{*/}	10,000		
ICP WATERS	17,000	16,000	17,000 ^{*/}	10,000		
ICP MATERIALS			70,000 ^{*/}	10,000		
ICP VEGETATION		34,500		10,000		
ICP INTEGR. MONITORING			13,000 ^{*/}	10,000		
ICP MAPPING	19,000	114,700	45,000 ^{*/}	10,000		
TASK FORCE ON HEALTH				10,000		
REPORT ON TRENDS	96,439		93,500			
TOTAL	196,439	249,200	304,500	70,000		

^{*/} Institutional contract under preparation.

Annex

PROVISIONAL LIST OF MEETINGS (SEPTEMBER 2001 - DECEMBER 2002)

3-5 September 2001 Geneva	EMEP Steering Body (twenty-fifth session)
24-27 September 2001 Geneva	Working Group on Strategies and Review (thirty-third session)
11-14 December 2001 Geneva	Executive Body for the Convention (nineteenth session)
22-26 April 2002 Geneva	Working Group on Strategies and Review (thirty-fourth session)
28-30 August 2002 Geneva	Working Group on Effects (twenty-first session)
2-4 September 2002 Geneva	EMEP Steering Body (twenty-sixth session)
16-20 September 2002 Geneva	Working Group on Strategies and Review (thirty-fifth session)
10-13 December 2002 Geneva	Executive Body for the Convention (twentieth session)
	* * *
1-4 October 2001 Zagreb	Subregional training workshop on dynamic modelling
24-26 October 2001 Torun (Poland)	Ad hoc expert group on POPs (second meeting)
6-8 November 2001 Ystad (Sweden)	Joint group of experts on dynamic modelling (second meeting)
3-4 December 2001 Bonn (Germany)	Joint Task Force on the Health Aspects of Air Pollution (fourth meeting), to address health risks of POPs from long-range transboundary air pollution
3-6 December 2001 Gerzensee (near Bern) (Switzerland)	EMEP/EUROTRAC LOOP workshop on NO _x and/or VOC limitation of ozone formation

11-14 February 2002 Trier (Germany)	Programme Task Force, ICP on Effects of Air Pollution on Natural Vegetation and Crops (fifteenth meeting)
18-21 March 2002 Lillehammer (Norway)	Programme Task Force, ICP on Assessment and Monitoring of Acidification of Rivers and Lakes (seventeenth meeting) and workshop on heavy metals (Pb, Cd and Hg) in surface waters; monitoring and biological impact
24-27 April 2002 Prague	Programme Task Force, ICP on Integrated Monitoring of Air Pollution Effects on Ecosystems (tenth meeting)
15-19 April 2002 Sorrento (Italy)	Programme Task Force, ICP on Mapping (eighteenth meeting); and Twelfth CCE workshop on modelling and mapping
13-15 May 2002 Kjeller (Norway)	Programme Task Force, ICP on Effects of Air Pollution on Materials, Including Historic and Cultural Monuments (eighteenth meeting)
18-22 May 2002 Lisbon	Programme Task Force, ICP on Assessment and Monitoring of Air Pollution Effects on Forests (eighteenth meeting)
May 2002	Joint Task Force on the Health Aspects of Air Pollution (fifth meeting)
Spring 2002 Netherlands	Second workshop on the valuation of ecosystem benefits from air pollution abatement of the Network of Experts on Benefits and Economic Instruments (NEBEI)
October 2002 (Moscow) (tentatively)	Programme Task Force, ICP on Assessment and Monitoring of Acidification of Rivers and Lakes (eighteenth meeting)
October 2002 Ukraine	Subregional workshop on critical load mapping and dynamic modelling in south-east and east European countries
11-13 November 2002 Bern	Workshop on empirical critical loads for nitrogen deposition on (semi-)natural ecosystems
20-22 November 2002 Gothenburg (Sweden)	Workshop on level II critical levels of ozone for vegetation
December 2002 Berlin	Follow-up workshop on critical limits for heavy metals