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CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

International Cooperative Programme on Modelling and Mapping of Critical Loads and Levels and Air Pollution Effects, Risks and Trends

DRAFT CHAIR's REPORT

of

22nd CCE Workshop and the 28th meeting of the Programme Task Force

16th-19th April 2011 in Warsaw, Poland

The meeting was attended by 48 delegates from the following 23 countries: Austria, Azerbaijan, Bulgaria, Canada, Croatia, Czech Republic, Denmark, France, Germany, Ireland, Italy, Norway, P.R. China, Poland, Republic of Moldova, Russia, Slovenia, Sweden, Switzerland, The Netherlands, Ukraine, United Kingdom, United States. The bureau of the Working Group on Effects (WGE), the ICP Vegetation, the ICP Waters, the ICP Forests, the ICP Integrated Monitoring, the Coordination Centre for Effects (CCE), NEBEI and the UNECE secretariat were represented. The list of registered participants is attached as ANNEX 1.

TF decisions were reviewed by the participants during the meeting. Presentations were made available on the CCE website.

Introduction

Ms. Sylwia Wasniewska - Director of the KOBIZE expressed her welcome to the participants on behalf of Mr. Maciej Korolec – Polish Minister of the Environment and Prof. Barbara Gworek – Director of the Environmental Protection Institute (IOS). KOBIZE is a division of IOS.

Mr Tomasz Pecka welcomed the participants and briefly introduced the programme of the meeting and the first speakers.

Mr Boguslaw Debski, representing the Polish national emission inventory team – a section of KOBIZE, presented the latest results of the national emission inventory for the LRTAP Convention focussing on the latest improvements in the inventory. He compared the emission estimates for the year 2010 with those for 2009 and the earlier years, and informed about gridded emissions and emission from Large Combustion Plants.

Mr Wojciech Mills presented a retrospective and milestones on the work carried out by the ICP M&M. In 1988 the critical load concept was developed and the Task Force on Mapping was established. Two years later the Coordinating Centre for Effects (CCE) was set up. The 1994 Protocol (so called 2nd sulphur protocol) was the first effects-based protocol. In 2012 the revision of the 1999 Gothenburg Protocol is going to be finalized and approved.

Mr Hettelingh presented the objectives of the meeting. The first topic was the review and discussion of the response of the call for data and NFC contributions.

The second item covered research studies on nitrogen (N) induced change of plant species biodiversity and their applications at local or regional scales.

The third item was an initial discussion about methods and objectives for valuing air pollution effects. This point has been included in the LRTAP Convention Long Term Strategy.

The 4th item was about the work plan for ICP M&M, CCE within the WGE and the Convention. It was underlined that this work plan is being elaborated in accordance with the Convention Long Term Strategy. This would be the opportunity for all participants to present their contribution.

The 5th item was about collaboration and communication within the Convention. Other ICPs were invited to present relevant work.

The 6th item was the training session on dynamic model for N impacts on vegetation. The Chairwoman thanked the CCE and collaborators for organising this session and for the energy they put in allowing the whole ICP M&M community to understand the use of the available tools.

In the 7th item, the main contributions of ICP M&M to the LRTAP convention would be summed up and it would be the time to wrap up the meeting, checking together the minutes…

Mr Krzysztof Olendrzynski, from the UNECE LRTAP Convention Secretariat presented an update on the activities and developments on-going under the Convention. He concentrated on the issues relevant for the Working Group on Effects: Long-term Strategy, Action Plan and the revision of the Gothenburg and Heavy Metals Protocols.

The TF adopted the agenda of the meeting and the minutes of the last year meeting.

[Introduction :] The Task Force:

a) Thanked for Ms Wasniewska and Mr Debski their welcome;
b) Thanked Mr Mill for his interesting retrospective on the ICP M&M activities.
c) Adopted the Agenda of the 28th ICP M&M TF and the minutes of the 27th ICP M&M TF;
d) Took note of the information provided by Mr Olendrzynski on the LRTAP Convention.

I. ICP M&M / CCE call for contributions issued in 2011

Mr Jaap Slootweg presented the results of the call for contribution, as recommended by the 27th ICP M&M TF and requested by WGE at its 30th session. This call had several objectives:

i. An overview of endpoints considered by the NFCs.
ii. The application of biodiversity indices as summarized in the CCE Status Report 2010.
iii. The comparison of simulation results using different models.
iv. The comparison of simulation results using different sites.

v. Increase policy relevance: NFCs are invited to include nature protection areas (such as Natura 2000 areas) in their model testing.

vi. Regionalisation: NFCs are recommended to review the possibilities to use EUNIS classes, habitat classes and eco-regions as a basis for regionalisation.

vii. Enlarge the Veg-database.

Mr Slootweg presented the results of the call for data. 9 Parties provided new information in their contributions. CA and RO are also expected to provide their inputs. PL, DE and SE submitted new estimates for CLs for nutrient N and for S. Six countries provided country reports: AT, CH, DE, FR, PL, SE. Less sites are were considered compared to the call in 2011.

The discussion underlined the complexity of the call, the (short) period available to respond to the call, the need to review the Veg table with an objective to re-group species. It was felt that the call for data and methods to be applied should be further simplified. A number of NFCs expressed concerns about funding issues. It was felt that the calculation chain had to mature further in order to provide results to policy.

The CCE proposed the further development of a possible way forward for helping NFCs to develop simple EUNIS specific biodiversity function. The function is aimed to establish a relationship between the N deposition and "no net loss of biodiversity" (NNLB) for each EUNIS class in a country. The method for deriving the function is hypothesized to be derived from selecting (at least) two deposition points within one EUNIS class. One deposition point is the lowest (for instance background) deposition, while the second reflects the highest deposition in 2000 within one EUNIS class. The no net loss index for each deposition point is the result of a simulation of any soil-vegetation model towards 2100. The index is set to 1 for the value of the no net loss index that corresponds to the simulation result using the lowest (background) deposition in 2000. The minimum value of the index results from a similar simulation using the deposition of 2000 in the soil-vegetation simulation to 2100. Tests are needed to verify whether the biodiversity function can be used as response surface of EUNIS specific relations between nitrogen deposition and NNLB. A list of relevant EUNIS class may be provided by the CCE. It is recommended that the sites are chosen in protected areas, that they cover a wide range of sensitivity and that they are located in the widest possible range of deposition.

However, irrespective of the results of these tests, it is considered useful for NFCs to focus on EUNIS class specific dynamic soil-vegetation simulations and submit results in a call for data over a sufficiently long submission time period.

Presentations were given by Sweden (Karin Hansen), Austria (Thomas Dirnböck), US (Jason Lynch), Poland (Thomas Pecka) and UK (Jane Hall). It highlighted the need to further pursue the development of the simple modelling chain suggested by the CCE, especially with regards of regionalisation. Progresses in regionalisation and in parameterisation of the Vegetation database were reported although improvements are still required for a fully operational tool. In Poland, acidification of forest ecosystems is still observed while in the UK correlation between nitrogen deposition and vegetation could not be observed in recent vegetation surveys. Work on critical loads in the USA has progressed considerably and this is a welcome contribution to the work carried out under ICP M&M.

[Session 1] The Task Force, taking note of the outcome of the 2011/2012 call for contribution,

a) Thanked the CCE for its considerable work in the organisation of the call for

data and the compilation of its results;

b) Thanked the NFCs and acknowledged the information provided made by the NFCs in responding to the various CCE requests;

c) Decided that country data could remain available on the CCE FTP / web site for other countries to test models.

d) Decided a next call for data should be designed to focus on simple generic biodiversity indicator termed “no net loss of biodiversity” (NNLB).

e) Stressed that NNLB should be chosen to reflect any country or ecosystem specific biodiversity indicator chosen to be submitted by NFCs.

f) Encouraged the further development of a possible way forward as proposed by the CCE for helping NFCs to develop simple EUNIS specific biodiversity functions.

g) Agreed that this method would be tested in collaboration of the Universities of Lund, Wageningen, and Malmö and other NFCs as appropriate and included in a call. However a call for a limited number (two) of EUNIS specific simulation results with the described specifications is considered useful in any case.

h) Reviewed options to submit a call for data with a response time of about 1.5 year (call to be issued in the autumn 2012 for response in the spring of 2014).

i) Decided that the contributions to the CCE would continue to be incorporated into the European database.

j) Contributions for the 2012 call can still be submitted to the CCE until 21st May 2012.

k) Stressed the importance of NFC work and contribution to provide data and results in support of policy development and implementation under the Convention.

II. On field measurements, model assessments and regional applications addressing (the N-induced change of) plant species diversity

In introduction, to this topic, Mr Peringe Grennfelt, Chairman of the Working Group on Effects, presented the achievements and challenges of the group within the LRTAP Convention and beyond.

He concentrated on the achievements and future challenges of the LRTAP convention. He assessed the scientific value of the WGE work as very high. Visibility of this work needs to be increased. WGE work did not form the basis for the revision of the Gothenburg Protocol (GP). In LRTAP science is in the convention unlike in other environmental conventions. He briefly described the on-going review of the convention. Reports on the outcome of the protocols (assessment reports) should be elaborated every 4-5 years. EMEP and CCE produce country reports. Joint EMEP and WGE country reports could be foreseen. The new challenges include: outreach activities in terms of substance (climate change, biodiversity, nitrogen) and geography (EECCA, hemispheric).

In the following discussion, it was stressed that some of the possible options for reorganisation should take good account of the existing networks, their functionalities and proved effectiveness while reviewing a need for further efficiency. A need for improved

communication was acknowledged and this has already been undertaken under the actual infrastructure of the WGE and its reporting obligations (i.e. guidelines for the reporting of effects) Convention. Thematic reports would be one step further in this direction.

Mr Hettelingh introduced the following speakers. The aim of this session was to share the progresses made on assessment of N induce changes on plant species diversity.

Presentations were given by Switzerland (L. Kohli, E. Hiltbrunner and B. Rihm), Sweden (H. Sverdrup and S. Belyazid), France (A. Probst), Poland (M. Reizer and R. Ulanczyk), Italy (A. de Marco), Russia (A. Komarov), Germany (T. Sheuschner), CCE (J. Slootweg). Austria (T. D.)

Posters were also presented by Azerbadjan (S. Shiraliyev), Canada (J. Aherne), CCE/ECLAIRE/The Netherlands (JP Hettelingh), The Czech Republic (I. Skorepova), France (A. Mansat), Germany (J. Riediger), Germany (T. Scheuschner), Poland (W. Mill), Republic of Moldova (S. Drucioc), Russia (I. Priputina), Switzerland (E. Hiltbrunner), UK (E. Rowe) and Ukraine (H. Evstafyeva).

These presentations indicated that effects of N deposition on vegetation were both observed and modelled successfully by various NFCs. Different modelling approaches were described. They underlined the importance of changes to plant communities justifying the need for stepping up assessments of nitrogen deposition impacts.

In the discussions, it was stressed that because of climate change, it would not be possible to go back to conditions that were known in the past. Therefore, the only 'good' ecological state that could be reached had to be defined in the future. It was also pointed out that the work done under the ICP M&M aimed at large scale regional impact assessments to develop, support and assess international policies. Tools could be used for local scale assessment but their adaptation to such studies was at the moment outside the scope of the ICP M&M. Discussions about biodiversity endpoints showed that richness, diversity indicators, red list species… all had their own advantages and limitations. The choice for one or another should be done at national level (in the same way as done for critical levels for acidity or eutrophication). This choice could be underpinned and justified with help of and in collaboration with national habitat experts. It would be beneficial to NFCs to present this work to the persons in ministries in charge of air pollution as well as those in charge of habitats conservation. However, it was stressed that on a European scale any indicator could be represented in "a no-net loss of biodiversity" index that would be comparable between countries in a similar way as assessments of critical load exceedances

[Session 2] The Task Force, taking note of the wealth of information provided by the participants,

a) Thanked Mr Grennfelt for its overview.

b) Appreciated the value of information presented by the NFCs.

c) Recommended that long term assessment of biodiversity change should take into account climate and land use changes as well as air pollution effects.

d) Insisted that work carried out under the Convention aimed at regional assessments.

e) Decided that approaches that focus on key species or key species groups should be developed with the aim to develop vegetation models at the region (European) scale.

f) Recommended NFCs to present their approach for assessing biodiversity change due to air pollution to relevant ministries (in charge of air pollution, of habitat conservation…).

III. Valuing air pollution effects

The chairwoman introduced this topic indicating that valuing air pollution effects was a request from the Executive Body. It may also be a way to help policy makers to take air pollution effects on ecosystems into account.

Mr Chris Evans (UK) described how valuing the impacts of air pollution had been tackled in the UK. A number of Ecosystem Services were selected. The impact Pathway was presented, a change in economic value was quantified for N impact on ecosystem services and response functions and valuation were derived.

Mr Mike Holland, Chair of the NEBEI Group under the LRTAP Convention, presented a number of reflections regarding indicators for cost-benefit assessment. Cost Benefit Analysis (CBA) should be seen as an economic as well as a communication tool, with an objective to compare costs and benefits of air pollution policies. Economic instruments that may be taken into account are environmental taxes and charges (as in eg. ClimateCost Project). In this field of activities, health impacts are the type of impacts that are investigated. Damages to crops and materials are being monetized to an increasing extent. The public target for this information could be the governments (finance, health, agriculture, energy, environment), public, NGOs, industry. The monetisation of impacts on the environment currently focuses on ecosystem services. Simplified tools to extend the CBA toolkit maybe developed under NEBEI in collaboration with ICP M&M and other ICPs.

In the following discussion, it was stressed that CBA should be aimed at identifying an operation indicator to provide monetary information in support of assessing air pollution abatement policy alternatives. At the moment, this indicator is missing and therefore impacts on ecosystems may not be sufficiently be accounted for. It should be noted that any single indicator may not provide a complete evaluation of the cost and benefits of impacts because not all impacts can be monetised. An evaluation can however be well adapted to ecosystems services (eg recreational role of surface waters). ICP Waters and Vegetation indicated that they had started a reflection and work on this topic. A common workshop between NEBEI and WGE was proposed and Peringe Grennfelt proposed to evaluate the possibility to take the lead for its organisation.

[Session 3] The Task Force, noting that this topic was formally discussed in the task force for the first time,

a) Thanked the speakers for their presentations.

b) Expressed willingness to participate to a WGE-NEBEI workshop dedicated on cost benefit analysis of air pollution impacts on ecosystems.

c) Encouraged NFCs to contribute to CBA indicators as appropriate, following the UK example.

IV. Issues to be anticipated for future work plans of the ICP M&M

The chair introduced this session by presenting the Convention Long Term Strategy and its action plan. She insisted on the requests that were particularly relevant to the ICP M&M community, such as:

- streamline and rationalise operations and decrease the number of meetings,
- develop effect indicators and cost benefits assessments,
- encourage EECCA participation and collaboration with EECCA countries,
- improve knowledge on links and co-benefits with biodiversity and climate change,
- intensify collaboration outside the Convention (especially with biodiversity and climate change communities),
- improve communication within the Convention, but also with national policy makers.

Meanwhile, as it is to be anticipated that policies need to be more and more integrated, NFCs were reminded that part of their role is to communicate their scientific results to their policy makers.

Ms Le Gall reviewed the Convention work plan items for the ICP M&M (document ECE/EB.AIR/2011/3) and noted that actions under the ICP M&M 2012-2013 work plan were achieved, on going or needed to be postponed due to delays in policy development.

(a) Report on the scenario analysis for the Thematic Strategy on Air Pollution (TSAP) and the Gothenburg Protocol (2011/2013): TSAP is delayed while contribution to the Gothenburg protocols take the form of reports (e.g. 2011 CCE Status report, WGE impact report, contribution to guidance documents)

(b) Updated report on the development and implementation of modeling and mapping methodologies in ex post integrated assessment modelling (e.g. 2011 CCE Status report);

(c) A call for National Focal Centers (NFCs) reports of contributions to dynamic modeling of vegetation changes and tentative applications by NFCs and CCE of dynamic modeling of vegetation changes at regional scale (achieved, cf. session 1).

New activities are:

(a) Conduct work pursuant to decision 2010/2 (Black carbon). The activity on this topic is limited as is information on BC impact on vegetation.

(b) Progress on identification and use of biodiversity endpoints and indicators. Preliminary testing at European scale; (ongoing, cf. session 1)

(c) Foster collaboration between NFCs, CCE, habitat experts and the European Topic Centre (ETC) for biodiversity for reporting on air pollution effects on protected areas and in particular on N effects on protected areas under Article 17 of Habitat directive for EU countries (several contacts have been taken. Ongoing);

(d) Contribute to the EMEP-Working Group on Effects reporting on the assessment of the Gothenburg Protocol (ongoing, cf. session 4).

Highlights from the Tour de table are given in ANNEX 2.

[Session 4] The Task Force, acknowledging the diversity of the NFCs activities,

a) Thanked the NFC for the accomplished work.

b) Expressed concern that NFCs resources may not allow sufficient involvement in the activities agreed in the EB work plan.

c) Noted the importance of early information about a call for data to secure funding and to organise their work.

d) Acknowledged the importance of research programmes such as Eclaire to pursue and integrate the work done under the WGE in general and under ICP M&M in particular.

V. Work plan of - and collaboration under - CLRTAP 2012-2013

The chairwoman introduced this session stressing that links between ICPs and with other groups under the Convention were one of the strength of the LRTAP Convention. The presence at this meeting of chairs of other ICPs, of representatives from EMEP was of great importance.

Then she introduced the session speakers: Harry Harmens, chair of the ICP Vegetation, Berit Kvaeven, chair of ICP waters, Lars Lundin, chair of ICP integrated monitoring, Martin Lorenz, for the ICP Forests, Wolfgang Schoepp for EMEP and the TFIAM. The chair woman presented the results of the WGE report on the effects of air pollutants according to the Gothenburg protocol scenario and the brochures prepared by ICP Vegetation (in English, French and Russian) on the basis on the common full report. This report would be submitted to the Convention as an unofficial document for Executive Body meeting planned between the 30th April and the 4th may (informal document #14).

Following these presentations, the discussions highlighted that it was important that all maps presenting critical loads and exceedances over a regional scale should be set up in collaboration with national ICP M&M focal centre to avoid confusion. Therefore it was agreed that NFCs of ICP Forests would make their data available to ICP M&M NFCs to ensure inclusion in the European database on critical loads and input parameters. The collaboration between EMEP and ICP M&M would thus ensure the consistent computation and mapping of exceedances. It was emphasized that exceedances computed by the ICP Forests for each ICP Forests site, using local data are especially valuable when interpreted in the context of measured impacts. They are fully in line with the obligation of the WGE to have integrated modelling assessments of impacts be anchored in reality.

Several NFCs collaborate and exchange data with their counterparts in other ICPs. Germany, France, Austria, … have instances where national focal persons from the different LRTAP bodies meet and exchange. Italy expressed difficulties to communicate to the ICP Forests and ICP IM counterparts. Heads of these ICPs accepted to encourage their NFCs to collaborate with ICP M&M.

Joint meetings with other groups were welcomed over specific topics (such as biodiversity or Cost benefit analysis).

[Session 5] The Task Force, taking note of the propositions from the participants,

a) Encouraged NFCs to exchange information with their counterparts from other LRTAP groups.

b) Noted the concern of several NFCs that ICP Forests present European maps of CLd calculated on their Level I plots, causing possible confusion in comparison to maps produced with the official ICP M&M critical loads database.

c) Recommended that NFCs of the ICP Forests and ICP M&M collaborate for the inclusion in the national submission of CLd to the CCE for the European database.

d) Appreciated the willingness of several EECCA countries to participate to WGE and ICP M&M activities.

VI. Training sessions for dynamic models: VSD+-Veg and auxiliary models (GrowUp, MetHyd...)

The training session was organised to ensure all NFCs could use modelling tools and database offered by the CCE. Discussions between participants led to the following observations.

The training sessions are useful and should be renewed in coming years. They provide a forum for discussions between model developers and users. They highlight small things to be fixed, technical aspect to be improved, software incompatibilities. Model will be consolidated thanks to NFCs involvement and with the help of vegetation experts. It was acknowledged that NFCs would benefit from more time to build up their expertise with the model. There is a need to allow specification of more realistic scenarios for forest growth.

NFCs were informed that the deadline for submitting information to the status report was the 21st may. Submission of data may be done as .txt (complete) files. Access version would be preferred.

[Session 6] The Task Force, taking note of the propositions from the participants,

a) Thanked Kobize, the CCE and collaborators for the organisation of the training session;

b) Recommended that training workshops would be organised in the future during the next meetings.

c) Encouraged NFCs to use the models provided by CCE.

d) Asked that further improvement on the models will be done.

VII. Inputs to the 31st session of the WGE and overall conclusions

Mr Hettelingh presented the contents of a technical document and the Status Report 2012 that would be submitted to the WGE for its September 2012 meeting. This included

- A technical report on the ICPMM activities (not translated). Include a more detailed explanation of the scenario analysis, the summary of this meeting.
- A joint report: a summary of the most important issues/findings/developments carried out by the group.
- The WGE impact analysis.

- The Status report, through which, via the countries report, each NFC may stimulate their ministries to continue funding. Ch1; scenario analysis. Ch2: call for data. Ch3: Modelling by Alterra. Then the country report.

Ms Le Gall presented the guidelines document and the guidance document VII submitted for the support of the Gothenburg protocol. She insisted that these documents where valuable tools to assess the implementation of policies in countries.

As specified in the work plan, documents that would be presented to the WGE would be:

- CCE 2012 status report,
- Report on technical activities,
- Updated report on WGE impact assessment of the different scenario derived for the Gothenburg protocol negotiations,
- A summary report on the main progresses, to be compiled in a WGE joint report with contribution for all the ICPs.

The chair woman indicated that the location and the time of the next meeting will be decided at a later stage.

The minutes were presented to the participants, discussed and modified according to discussion

Then hosts and participants were warmly thanked for their valuable contribution and the meeting was closed.

[Session 7] The Task Force, taking note of the propositions from the ICP M&M and CCE Chairs, agreed that the above mentioned reports be produced and submitted to the WGE.

VIII. Annexes:

1. List of participants to the meeting.
2. Tour de Table: highlights by NFCs (To be finalised in July 2012).
3. Minutes of the Sub-regional workshop on examination of cross-border consistency of critical loads mapping and dynamic modelling results (Austria, Czech Republic, Germany, Poland, at Strausberg (Germany) 17-19 October 2011).