

Saltsjöbaden V

Working Group 3: Effect-based international air pollution strategies

Chairs/Rapporteurs: Brit Lisa Skjelkvåle, Maximilian Posch, Filip Moldan

Attendees: Anna Engleryd, Martin Forsius, Harry Harmens, Mike Holland, Alan Jenkins, Sergejus Konkovas, Anne-Christine Le Gall, Lars Lundin (part.), Rob Maas (part.), Tim Oxley, Irina Priputina, Thomas Scheuschner, Harald Sverdrup, Johan Tidblad

To stimulate discussions, the following five short presentations were given:

- R Maas: “Effect-oriented indicators for integrated assessment”
- H Harmens: “Impacts of ozone on vegetation: policy-relevant indicators”
- J Tidblad: “What is the current status of the effects on materials?”
- A-C Le Gall: “Future effects-based air pollution control strategies: the need for new approaches?”
- M Holland “Air pollution: Good News!”

The Working Group (WG) discussed only effects on ecosystems and materials. Health effects were discussed in WG 5; but many of the points raised and discussed pertain to health effects as well. It should also be noted that there is a potential overlap with WG 2 concerning nitrogen (N) issues.

The set-up of – and discussions in – this WG were partly triggered by the perception that in the final round of negotiations leading to the revised Gothenburg Protocol the effect-based approach for determining emission reductions was not used (maybe driven by the unfavourable economic conditions). Also a lack of proper communication of results was suggested as a reason for the low profile and use of effect-based research in recent emission reduction agreements.

Irrespective whether or not effects on ecosystems and health influenced the outcome of those negotiations (and some participants felt that there *was* an influence, albeit less visible), the WG put forward the following 2 key recommendations:

→ **The WG recommends that the Parties to the LRTAP Convention continue to support the effects-based work (policy-relevant science and monitoring) on a viable level**, especially as the Parties themselves and other multi-national bodies (such as the EU) also (can) use the results.

→ **The WG recommends that the Executive Body of the LRTAP Convention establishes the position of a communication officer**, whose main task is the communication between the Convention and the outside world (policy makers and the public at large).

Policy-relevant science – Main points/outcomes/recommendations:

- Effects (on ecosystems, health, materials) are the basis and incentive for emission reductions!
- The scientific work of the Working Group on Effects (WGE) (and other science-related bodies under the Convention) has to be policy-relevant, but also high-quality, peer-reviewed and (preferable) published.
- It is recognised that (transboundary) air pollution effects no longer dominate the agenda.
- Thus, links to other impact categories, such as climate change and biodiversity – as emphasized in the Long-term Strategy of the Convention –, become ever more relevant, especially to identify win-win strategies.
- Also, new indicators, reflecting e.g. changes in biodiversity due to air pollution, should be developed and made useable in integrated assessment (IA).
- In addition to N, sulphur is still important as, e.g., soil pH is a key abiotic driver of biodiversity changes and the loss of archaeological heritage (in addition to climatic variables).
- For IA models (IAMS) science/indicators have to be simplified. Thus, IA should be always accompanied by so-called impact (formerly known as ‘ex-post’) analyses – carried out by the WGE

with the help of EMEP –, which make full use of the knowledge on effects not included in IAMs, such as damage to materials (esp. landmark buildings or structures), results of dynamic modelling (time lags), influence on C cycle, food security, trends in specific (popular) species, restoration costs of nature areas, etc.

- The focus on nature protection areas (e.g. Natura2000 areas in the EU) could be advantageous, as arguments whether action is required are (more or less) mute.
- Since health effects ‘sell’ better, links between ecosystem health and human health should be researched/established (see, e.g., *Nature* 494: 230) and possibly quantified.
- The concept of ecosystem services (ES) is a useful framework that could/should be embraced by the WGE. It could help to structure problems and their prioritisation.
- The monetisation of effects, especially on ecosystems, remains a problem, or even controversial. But viewing them as ES could help at least to better classify/prioritise problems.
- Decreasing peaks and the increasing background of several pollutants require (a) the establishment of indicators dealing more with lower-level chronic exposure rather than peak exposure, and (b) the collaboration with groups dealing with hemispheric problems (e.g. HTAP, CCAC, IPCC).
- Monitoring networks are needed for ground-truthing policy-relevant science as well as for detecting new impacts or the recovery from past impacts.
- Present monitoring networks are already curtailed to such an extent that further reductions might jeopardise their meaningful existence. However, every opportunity should be exploited to make monitoring networks serve multiple clients (national and international) and other problems (e.g. effects of climate change).
- Monitoring is also the key for every efficiency and sufficiency assessments of policy measures.

In summary:

High-quality, policy-relevant science on air pollution effects has been, and shall be, a key element underpinning (transboundary) air pollution agreements.

Communication – Main points/outcomes/recommendations:

- Communication within the Convention is the primary task of its subsidiary bodies. However, communication has to be a two-way process, i.e. any (non-routine) communication (report) from ‘below’ should receive honest feedback from ‘above’ (and not only be ‘taken note of’).
- Reporting within the Convention can certainly be improved, and any guidance from the EB is welcome. Maybe the number (and size) of official reports can be reduced?
- Common reporting by WGE and EMEP might be a way forward. In this context common ‘country reports’ could help keeping Parties engaged.
- Reporting/publicising to outside audiences (i.e. outside the LRTAP Convention) has not been paid enough attention by many groups within the Convention.
- New(er) ways of communication (websites, social media, apps) should be embraced. However, the WG recognised that the experience and capacities within the Convention are limited in this respect.
- All reporting should have a defined target group: policy makers (at various levels), special interest groups or general public. Also the geographic reach should be taken into account, i.e. local, national, international.
- Any short, ‘summary’, ‘executive’ report/brochure has to be backed by scientific underpinning/reporting (which does not need to be scrutinised by the EB, but can easily be retrieved).
- It has been recommended to also communicate good news (people are sometimes tired of doomsday news). E.g., we know there are effects and there are solutions available!

In summary:

There is room for improvement in communicating results on air pollution effects, both within the LRTAP Convention as well as to policy makers at various levels and the general public.