



United Nations Economic Commission for Europe (UNECE)
Convention on Long-range Transboundary Air Pollution

Working Group on Effects (WGE)

**International Cooperative Programme (ICP) on
Integrated Monitoring of Air Pollution Effects on Ecosystems**

Minutes of the twenty-sixth Programme Task Force held on May 7-9 2018 in Warsaw, Poland

1. The meeting was organized jointly with the International Cooperative Programme on Assessment and Monitoring of the Effects of Air Pollution on Rivers and Lakes (ICP Waters). The meeting arrangements were carried out by the Institute of Environmental Protection - National Research Institute (IOS-PIB) and the meeting was financed by the Ministry of the Environment of Poland. Meeting was attended by 46 experts from the following Parties to the Convention on Long-range Transboundary Air Pollution (CLRTAP): Armenia, Austria, Czech Republic, Finland, Germany, Ireland, Italy, Norway, Poland, Russian Federation, Spain, Sweden, Switzerland, and United Kingdom. The Chair of ICP Forests Programme, a representative from ICP Modelling and Mapping and a representative of the UNECE Secretariat were also present. The list of participants is attached as Annex I.
2. Mr. U. Grandin and Mr. S. Valinia, Co-Chairs of ICP IM and Mr. G. Skotte, the Chair of ICP Waters welcomed all participants and opened the Joint Task Force meeting.
3. Mrs. K. Majewska from Ministry of the Environment of Poland welcomed the participants to Warsaw and Poland.
4. The joint Task Force adopted the agenda of the meeting (Annex II) including the full list of presentations.
5. Reports
 - a) Mr. K. Olendrzynski presented the latest news from Executive Body and the CLRTAP. He gave an update on recent developments in science, policy, and capacity building activities & outreach. A closer cooperation with UN Environment was especially suggested.
[Link to the detailed presentation of Mr. Olendrzynski](#)
 - b) Mr. S. Valinia, Co-Chair of ICP IM presented the on-going issues in Working Group on Effects. He made a special mention of the 160 recommendations given by the Policy review groups for WGE/EMEP and discussed how to adopt the recommendations ([presentation](#)).
 - c) Mr. M. Forsius, Programme Manager of ICP IM presented news from the Saltsjöbaden VI workshop, an international science-policy workshop (<http://saltsjobaden6.ivl.se/>). The future of effect monitoring was one of the topics of the workshop, including reporting under EU NEC Directive ([presentation](#)).
 - d) Mr. U. Grandin, Co-Chair of ICP IM presented the current issues, achievements & priorities in ICP IM Programme and the draft work plan for 2018-2019. These issues were covered in more detail in the separate ICP IM TF session. Mr. Grandin mentioned ICP IM threats and areas for improvement presented at the WGE Extended Bureau (Feb 2018) and the revised mandate for ICP IM: Mandatory yearly activities moved from Work Plan to the mandate ([presentation](#)).
 - e) Mr. G. Skotte, the Chair of ICP Waters presented the current issues in ICP Waters Programme. A special mention was made of the finalized Mercury report, work lead by ICP Waters with ICP IM participating. Mr.

Skotte also highlighted the EU NEC directive (NECD) and the legally binding obligation of the member states (MS) to monitor negative impacts of air pollution on ecosystems. The deadline for MS to identify their monitoring networks is 1 July 2018. Implementation of the NECD may secure funding of monitoring activities. Mr. Skotte also informed about participation in NECD expert group and new technical sub-group on ecosystem monitoring and reporting, with participation from both ICP Waters and ICP IM ([presentation](#)).

6. Reports from other ICPs

a) Mr. W. Seidling, the Chair of ICP Forests presented the current issues from ICP Forests. A special mention was made of the revision of the Manual in 2016/17 (<http://icp-forests.net/page/icp-forests-manual>) and WGE Work plan 2018/19 for all WGE members: Analyse effects monitoring network within WGE to improve integrated working and reporting ([presentation](#))

7. For details of the presentations in Thematic sessions I a-d & II e-f, please see [all presentations](#).

a. NEC directive. Status and progress

I. Mr. S. Valinia gave an introduction to NEC directive, opportunity for WGE?

Mr. Valinia stressed that the existing WGE monitoring networks under the LRTAP Convention fit to the NEC Directive objectives as a) operational network b) monitor key indicators of air pollution c) monitoring sites are representative of European ecosystem types

Also WGE provides a suitable platform for ecosystem monitoring as it has:

- tools (Methodologies & Manuals)
- broad panel of experts (international& multidisciplinary)
- more than 20 years of experience
- almost all MS participate in ICP programmes
- easy incorporation into the network
- scientific and technical support

Reporting of the monitoring network has to be done by 1st of July 2018. Data referred to in Article 9 shall be reported by 1 July 2019 and every four years thereafter.

[Link to full presentation by Mr. Valinia](#)

The joint session of ICP IM & Waters discussed the NECD and in particular ecosystem monitoring in detail. The chairs of ICP IM led this discussion and the main question was whether representatives from the member states have contacted the NFP and the ICP in getting guidance on developing and designing the ecosystem monitoring network. Sweden described that they invited experts from WGE and together design the program based on sites reported to the CLRTAP convention. Germany followed with a similar conclusion that the monitoring under WGE is also the monitoring used in the NECD. For the Czech Republic, the NFP was appointed to develop the program for the NECD which would include the combination of programs under WGE. In the meeting, all present representatives from the participating countries had been contacted by representatives from the different ministries or relevant authorities to contribute with knowledge and expertise in ecosystem monitoring. The meeting can conclude that, using the existing and expanding the monitoring networks under WGE is the most efficient and cost effective measure to comply with article IX in the NECD. By using the experience and expertise provided by the national representatives in the ICPs, a meaningful assessment of the impacts of air pollution on ecosystem monitoring can be made.

II. Mr. M. Velasco presented a Spanish case study about the possibilities to comply with requirements of NEC Directive and ICP Waters / Integrated Monitoring ([presentation](#))

8. For details of the presentations in Common sessions, please see [all presentations](#).

More detailed notes from the Joint TF meeting are available in the meeting report of ICP Waters (to be included on web pages of ICP Waters, see <http://www.icp-waters.no/>)

9. Separate Task Force Sessions

Below only notes from the short separate Task Force meeting of ICP IM are provided.

Separate ICP IM Task Force

- I. Mr. U. Grandin, Co-Chair of ICP IM opened the meeting.
- II. The TF approved the agenda.
- III. The TF approved the [Minutes from 25th ICP IM Task Force, Uppsala 2017](#).
- IV. Mr. Grandin presented the activities during 2017/18

Part of this information is also available in chapter 1 of the (draft) 27th Annual Report (AR) 2018 and in the [presentation](#).

- ICP IM was represented at 11 international meetings
 - ICP IM Programme Centre contributed to 2017 Joint WGE report
 - 2 scientific papers were finalized:
 - a) Scientific paper: “Long-term changes (1990–2015) in the atmospheric deposition and runoff water chemistry of sulphate, inorganic nitrogen and acidity for forested catchments in Europe in relation to changes in emissions and hydrometeorological conditions“ (J. Vuorenmaa et al. 2018) was finalized and was published in Science of The Total Environment.
 - b) Scientific paper: “Modelling study of soil C, N and pH response to air pollution and climate change using European LTER site observations” (M. Holmberg et al.). Manuscript accepted in ILTER special issue in STOTEN: “Detecting and explaining natural and anthropogenic changes by making use of large extent, long-term ecological research facilities of the international long-term ecosystem research (ILTER) network”.
 - ICP IM has contributed to the Joint Report on mercury in the aquatic environment (Joint report together with ICP Waters) (Braaten et al. 2017).
 - ICP IM participated in a joint coordinated exercise on dynamic modelling together with other ICPs
- V. Mr. Grandin presented the Work plan and future work priorities
- a) The Task Force discussed the work plan (see Annex III) and agreed the need to point out that ICP IM programme is productive in science. The Task Force accepted the work plan (Annex II) with two additions:
 1. Scientific paper on heavy metal (HM) trends in concentrations and fluxes across ICP IM sites in Europe, cooperation with ICP Waters (lead Sweden, S. Åkerblom).
 2. Scientific paper on the impacts of catchment characteristics, climate and hydrology on N processes (lead Programme Centre, J. Vuorenmaa).

For the 1st paper possible cooperation with ICP Forests was suggested.

For the 2nd paper additional data may be needed, though a couple of years of nitrogen data will be sufficient for this work. Additional info on the catchment characteristics may be needed. The Programme Centre will contact the National Focal Points.

The Task Force requested that an ‘official data call’ for both of these specific projects should be sent out.

- b) The Task Force discussed cooperation with other ICPs and organisations and noted that ICP IM has established useful collaboration with the following ICPs:
 - ICP on Modelling and Mapping (on critical load calculations);
 - Joint Expert Group on Dynamic Modelling (on changes in biodiversity);
 - ICP Waters and ICP Forests (on long-term trends calculations on effects indicators).
 - ICP IM also uses emission scenario data EMEP. Validation of EMEP HM data was considered a possible form of cooperation to improve the EMEP modelling.

- Cooperation with ICP Vegetation in Russia was also mentioned.

VI. The Task Force discussed financing the ICP IM work and possible external application.

Mr. Forsius mentioned the ESFRI roadmap as a possible source of indirect funding as many ICP IM sites also are LTER sites. NEC directive issue was seen as a possibility for funding for some countries.

VII. Ms. S. Kleemola (ICP IM Programme Centre) described the status of data reporting to the Programme Centre. The following sixteen countries have continued data submission to the ICP IM data base during the period 2013–2017: Austria, Belarus, the Czech Republic, Estonia, Finland, Germany, Ireland, Italy, Lithuania, Norway, Poland, the Russian Federation, Spain, Sweden, and a site on Crimean peninsula. Presently the number of ICP IM sites with on-going data submission, data for at least part of the ‘data period’ 2012–2016, is forty-four. Additional sites from Poland will be included later this year ([presentation](#)).

The Programme Centre requested National Focal Points to submit 2017 data by 1st of December 2018, using same procedure as earlier.

VIII. Mr M. Forsius presented the invitation (tentatively) to hold the 2019 ICP IM Task Force meeting in Finland in early June 2019. The Task Force agreed unanimously that 2019 meeting should again be a Joint meeting with ICP Waters.

IX. The Task Force approved the draft Annual Report 2018 and invited NFPs to provide written comments by June 4th 2018 and to submit additional contributions (short National Reports). If you wish to include a National Report but you can’t meet this deadline, please contact S. Kleemola.

The Task Force thanked the host country and the local organizers for the excellent arrangements.

X. The Co-Chairs U. Grandin and S. Valinia ended the 26th ICP IM Task Force meeting.

Annex I



UNECE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

International Cooperative Programmes on Assessment and Monitoring of Air Pollution on Rivers and Lakes

Integrated Monitoring of Air Pollution Effects on Ecosystems

Joint 34th ICP Waters and 26th ICP IM Task Force Meeting, Warsaw, Poland, 7-9 May 2018

Agenda

1. **Introductions** (Chairs ICP IM and ICP Waters)
2. **Meeting welcome** (Mrs. Kinga Majewska, Polish Ministry of Environment)
3. **Adoption of the agenda** (Chairs ICP Waters and ICP IM)
4. **General information about the meeting and excursion** (Rafał Ułańczyk, Tomasz Pecka)
5. **Reports**
 - a. Executive Body and updates from the CLRTAP (Krzysztof Olendrzynski)
 - b. Reports from Working Group on Effects and the Bureau (Salar Valinia, Gunnar Skotte)
 - c. Saltsjöbaden VI (Martin Forsius)
 - d. Current issues ICP IM (Chair ICP IM)
 - e. Current issues ICP Waters (Chair ICP Waters)
6. **Reports from other ICPs** (Chaired by ICP IM)
 - a. ICP Forests (Walter Seidling)
7. **Thematic sessions I** (Chaired by ICP Waters)
 - a. **Introduction to the thematic sessions**

State Environmental Monitoring in Poland - Organisation of Integrated Monitoring of Natural Environment in Poland NEC Directive (Anna Katarzyna Wiech, Andrzej Kostrzewski)
 - b. **Acidification and recovery**
 - I. ICP Waters regional acidification assessment (Kari Austnes)
 - II. Regional assessment of freshwater acidification in Poland (Rafał Ułańczyk)
 - III. Acidification and recovery in Swedish lakes and streams (Jens Fölster)
 - IV. Assessment of accumulation and spatial distribution of nitrogen and sulfur dioxides in atmosphere of Lori region of Armenia (including Debed river basin) and potential population health risk (Marine Nalbandyan)
 - V. An update of the acidification and nitrogen status of high altitude lakes in Alps: 2017 vs 1980s (Michela Rogora)

- c. **Heavy metals and POPs**
 - I. 30 years of integrated POPs monitoring at the background observatory Kosetice (Roman Prokes)
 - II. Pollution and anthropogenic-induced processes impact on lakes quality of Russian Arctic region (Marina Dinu)
 - III. Temporal trends in heavy metals across IM sites (Staffan Åkerblom)
 - IV. The mercury in fish report – key findings and policy relevance (Staffan Åkerblom)
- d. **Climate (and land use)**
 - I. Developing capacity to predict DOC response to reductions in atmospheric deposition (Don Monteith)
 - II. Are boreal lakes pipes or chimneys in the global carbon cycle? Long-term monitoring of DOC & process-based modelling in a lake catchment (Heleen de Wit)

Thematic sessions II (Chaired by ICP IM)

- e. **Biodiversity**
 - I. Observed and modelled trends in forest vegetation in ICP Integrated Monitoring, Forests, and LTER sites in Europe (Gisela Pröll)
- f. **Nitrogen**
 - I. Nitrogen and phosphorus at Lysina CZ02 (Pavel Krám)
 - II. Long-term changes in the inorganic nitrogen output fluxes in European ICP Integrated Monitoring catchments - an assessment of the role of internal nitrogen parameters (Jussi Vuorenmaa)
 - III. Reactive nitrogen in freshwaters – the 2019 ICP Waters report (Heleen de Wit)
 - IV. Nitrogen budget at the IM station "Puszcza Borecka" (Rafał Ułańczyk)
- g. **The NEC directive. Status and progress**
 - I. Introduction/background NEC Directive (Salar Valinia)
 - II. Spanish aquatic ecosystem monitoring programs: possibilities to comply with requirements of NEC Directive and ICP Waters / Integrated Monitoring (Manuel Toro Velasco)

8. Common sessions of ICP Waters and ICP Integrated Monitoring for report and discussion of work plan items (Chaired by ICP Waters)

- a. Chemical and biological inter-calibration (ICP Waters)
 - I. Biological intercalibration 2017 (Anker Halvorsen)
 - II. Chemical intercalibration (Øyvind Garmo)
- b. Thematic reports of common interest
 - I. Status and future plans ICP Waters (Heleen de Wit)
 - II. Future plans ICP IM (Martin Forsius)

9. Separate Task Force meetings

Separate ICP IM agenda

1. Opening of the meeting
2. Approval of the agenda
3. Approval of the minutes from the 25th ICP IM Task Force, Uppsala 2017.
4. Activities during 2017/18
5. Work plan and future work priorities
 - a. Reports to be prepared /finalized in 2018/19
 - b. Co-operation with other ICP:s and organisations: e.g. LTER-Europe
 - c. Ongoing and future research projects and cooperation
 - d. **General discussion:** Future work under the Convention (Salar Valinia)
6. Financing/external applications
7. Data submission and database status
8. Next Task Force meeting
9. Other business
10. End of meeting

Separate ICP Waters agenda

1. Status and progress ICP Waters
2. Reminder of priorities under Convention
3. Work plan
 - a. Current and planned reports
 - Regional assessment on surface water acidification status
 - 2019-report on reactive nitrogen
 - 2020-report.
 - b. Database - 2018 call for data
 - DOC database
 - c. Biological intercalibration, chemical intercomparison
 - d. NEC Directive
 - e. Data portal – presentation of data on ICP Waters homepage
 - f. Proceedings
4. Other issues
5. Adoption of the Minutes

10. TF meeting 2019 (Chaired by ICP IM)

11. Other Business (Chaired by ICP IM)

12. Closing of meeting (Chairs ICP Waters and ICP IM)

Annex II

List of Participants

Name	E-mail	Organization	Country
Agnieszka Kolada	akolada@ios.edu.pl	Institute of Environmental Protection - NRI	Poland
Andrzej Kostrzewski	andrzej.kostrzewski@amu.edu.pl	Adam Mickiewicz University in Poznan	Poland
Anieszka Pasztaleniec	paszta@ios.edu.pl	Institute of Environmental Protection - National Research Institute	Poland
Anna Katarzyna Wiech	k.wiech@gios.gov.pl	Chief Inspectorate for Environmental Protection	Poland
Burkhard Beudert	burkhard.beudert@npv-bw.bayern.de	Bavarian Forest National Park	Germany
David Elustondo	delusto@unav.es	University of Navarra	Spain
Don Monteith	donm@ceh.ac.uk	Centre for Ecology & Hydrology	United Kingdom
Ekaterina Pozdnyakova	katemukudori@mail.ru	Institute of Global Climate and Ecology of Roshydromet and RAS	Russia
Gaute Velle	gaute.velle@uni.no	Uni Research/ University of Bergen	Norway
Gisela Pröll	gisela.proell@umweltbundesamt.at	Environment Agency Austria	Austria
Godtfred Anker Halvorsen	godtfred.halvorsen@uni.no	Uni Research Environment	Norway
Gunnar Skotte	gunnar.skotte@miljodir.no	Norwegian Environment Agency	Norway
Hanna Kasprowicz	h.kasprowicz@gios.gov.pl	Chief Inspectorate for Environmental Protection	Poland
Heleen de Wit	hwi@niva.no	NIVA - ICP Waters	Norway
Hubert Schulte-Bisping	hschult1@gwdg.de	University Göttingen, Soil Science of Temperate Ecosystems	Germany
Jens Fölster	Jens.Folster@slu.se	SLU	Sweden
Jussi Vuorenmaa	jussi.vuorenmaa@ymparisto.fi	Finnish Environment Institute	Finland
Kari Austnes	kari.austnes@niva.no	NIVA	Norway
Katarzyna Rymwid-Mickiewicz	katarzyna.mickiewicz@ios.edu.pl	Institute of Environmental Protection - National Research Institute	Poland
Kinga Majewska	kinga.majewska@mos.gov.pl	Ministry of the Environment	Poland
Krzysztof Olendrzynski	krzysztof.olendrzynski@un.org	UNECE	Switzerland
Krzysztof Skotak	krzysztof.skotak@ios.edu.pl	Institute of Environmental Protection – National Research Institute	Poland
Luca Colombo	luca.colombo@supsi.ch	SUPSI - DACD	Switzerland
Magda-Lena Wiklund-McKie	Magda-Lena.Wiklund@slu.se	SLU, Department of Environmental Sciences and Assessment	Sweden
Manuel Toro Velasco	manuel.toro@cedex.es	CEDEX	Spain
Maria Holmberg	maria.holmberg@ymparisto.fi	Finnish Environment Institute	Finland
Marina Dinu	marinadinu999@gmail.com	GEOKHI RAS	Russia
Marine Nalbandyan	marinen3@yahoo.com	IGS of NAS of RA	Armenia

Martin Forsius	martin.forsius@ymparisto.fi	Finnish Environment Institute SYKE	Finland
Michela Rogora	m.rogora@ise.cnr.it	CNR Institute of Ecosystem Study	Italy
Milan Vana	milan.vana@chmi.cz	Czech Hydrometeorological Institute	Czech Republic
Pavel Krám	pavel.kram@geology.cz	Czech Geological Survey	Czech Republic
Pernilla Rönback	pernilla.ronback@slu.se	SLU, Department of Aquatic Sciences and Assessment	Sweden
Rafał Ulańczyk	rafal.ulanczyk@ios.edu.pl	Institute of Environmental Protection - National Research Institute (IOS-PIB)	Poland
Robert Kruszyk	rlk@amu.edu.pl	Adam Mickiewicz University in Poznan	Poland
Roman Prokes	prokes@recetox.muni.cz	Masaryk University	Czech Republic
Salar Valinia	salar.valinia@naturvardsverket.se	ICP IM	Sweden
Sirpa Kleemola	sirpa.kleemola@ymparisto.fi	Finnish Environment Institute (SYKE)	Finland
Staffan Åkerblom	staffan.akerblom@slu.se	Swedish University of Agricultural Sciences	Sweden
Thomas Cummins	thomas.cummins@ucd.ie	University College Dublin	Ireland
Thomas Scheuschner	thomas.scheuschner@uba.de	German Environment Agency	Germany
Tomasz Pecka	tomasz.pecka@ios.edu.pl	Institute of Environmental Protection - National Research Institute	Poland
Ulf Grandin	ulf.grandin@slu.se	SLU	Sweden
Walter Seidling	walter.seidling@thuenen.de	Thünen Institute for Forest Ecosystems	Germany
Øyvind Garmo	oga@niva.no	Norwegian institute for water research	Norway

Annex III: ICP IM Work plan for 2018 and 2019

Activity	Time-frame	Responsible
ICP IM work plan 2018		
Joint Report 2018 of the ICPs, TF Health and Joint Expert Group on Dynamic Modeling	WGE 2018	UNECE Secretariat, WGE Bureau and ICP IM Programme Centre
Finalization of 27th Annual Report 2018 (short National Reports are welcomed)	WGE 2018 (comments and additions by 4 th June, deadline for National Reports can be extended)	Programme Centre NFP contributions
Scientific paper on dynamic modelling on the impacts of future deposition scenarios on soil and water conditions in ICP IM catchments (In review)	Task Force and WGE 2018	Programme Centre and NFPs
Reporting of activities common to all ICPs, the Task Force on Health and the Joint Expert Group on Dynamic Modelling	WGE 2018	Programme Centre and Chairs according to instructions of the UNECE Secretariat
Submission of quality controlled results for year 2017 to Programme Centre	December 1 st 2018	National Focal Points
Cooperation with other ICPs, particularly regarding dynamic modelling (all ICPs), cause-effect relationships in terrestrial systems (ICP Forests, ICP Vegetation), and surface waters (ICP Waters).	According to decisions at the TF meeting	According to decisions at the TF meeting
Inter laboratory comparisons under leadership of ICP Waters, ICP Forests and EMEP	ICP F and ICP W	Voluntary activities of the National Focal Points
ICP IM work plan 2019		
ICP IM Task Force meeting 2019	June 2019	
ICP IM Annual Report 2019	Task Force and WGE 2019	Programme Centre in collaboration with NFPs
Report on dynamic modelling on the impacts of deposition and climate change scenarios on ground vegetation	Task Force and WGE 2019	Programme Centre and NFPs of Austria and Sweden
Scientific paper Report on the relationship between critical load exceedances and empirical ecosystem impact indicators	2019	Programme Centre and NFPs of Austria and Sweden
Scientific paper on HM trends in concentrations and fluxes across ICP IM sites in Europe, cooperation with ICP Waters	2019	Programme Centre and individual researchers, cooperation with ICP Waters, lead Sweden

Scientific paper on the impacts of catchment characteristics, climate and hydrology on N processes	2019	Programme Centre and individual researchers
Cooperation with external organisations (International Long Term Ecological Research Network ILTER, LifeWatch, GEO BON). Progress reports	Task Force 2019	Programme Centre and NFPs eLTER EU-project activities
Develop concepts for multi pollutant – multi effect relationships (NO_x, O₃, acidity, heavy metals, POPs, etc). Progress reports/contributions to Annual Report OR presentations in Workshop	Task Force 2018	Voluntary activities at National Focal Points
Reporting of ICP IM activities to WGE	WGE 2019	Programme Centre and Chairs