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 thirtieth Programme Task Force held on 10-12th May in Miraflores de la Sierra, Spain

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 was attended by experts (33 in person and 26 online) from the following Parties to the Convention on Long-range Transboundary Air Pollution (CLRTAP): Armenia, Austria, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Norway, Poland, Russian Federation, Spain, Sweden, Switzerland, and United Kingdom. The list of participants is attached as Annex I. The agenda is presented as Annex II. Detailed notes from the Joint TF meeting will be available in the meeting report of ICP Waters (to be included on web pages of ICP Waters, see http://www.icp-waters.no). Presentations from the thematic sessions are available from https://www.slu.se/en/Collaborative-Centres-and-Projects/integrated-monitoring/meetings/

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

§ 1 Opening of the meeting

Mr. Ulf Grandin opened the meeting

§ 2 Approval of the agenda

The TF approved the agenda

§ 3 Approval of minutes from 29th IM TF

The meeting approved the minutes of the previous TF meeting

§ 4 The Programme Centre

§ 4a Mr. James Kurén Weldon presented the new staff at the Programme Centre (PC):

Head of IM Programme Centre: Dr. James Kurén Weldon
Senior researcher: Associate Professor Martyn Futter
Data base: Dr. Pernilla Rönnback and Dr. Hampus Markensten
Expert on heavy metals: Associate Professor Karin Eklöf

The previous team at SYKE was thanked for their many years of successful work.

§ 4b The new website at www.slu.se/en/icp-im was introduced.

§ 4c The Annual Report

The new Programme Centre (PC) will produce the annual report as an SLU publication which will be citable, but in PDF format only. The PC suggested that annual reports in future would contain trends data for some key variables of interest, that can be updated in each edition of the report and suggested length of vegetation period, runoff S and N and throughfall S and N. Precipitation within vegetation period was also suggested. Further suggestions are welcome, please contact the PC.

Mr. Pavel Krám suggested being clearer about which sites are/are not reporting all data, so that we can include the largest number of sites in trends data, and in papers using IM data. Mr. Martin Forsius added that the previous PC in Helsinki used to do a special call for data in advance so that people could potentially gather available data that might be used in a paper or other publications.

The next IM annual report will be available for the EMEP/WGE joint September meeting in Geneva. The PC noted that a draft is usually available at the TF meeting, but the efforts this spring have been focussed on the move of the PC and associated tasks.

§ 5 The new IM database

Mr. Hampus Markensten presented the new database, explaining the reasons for the change of format to SQLite and demonstrating both the process for data submission and how to interpret and respond to the automated validation reports that are generated in the process. The validation script reads in the text file or Excel file, saves as CSV, and generates the validation report, a two-step process. Submission of data can be in text or Excel, but Excel is preferred. CSV (comma separated value) format can be difficult because of different encodings (ANSI, UTF-16 etc.) and it is not clear which is used. Empty observations or measurements may not be included in submitted data. Detection limits are reported by using the L Flag together with the detection limit.

§ 5b Database and network status

Mrs. Pernilla Rönnback reported on the current state of data reporting to the PC. There has been data submission for at least part of the last five years 2016-2020 from the following countries: Austria, Czech Republic, Estonia, Finland, Germany, Ireland, Italy, Lithuania, Norway, Poland, the Russian Federation, Spain, Sweden, and Switzerland.

§ 5c Data submission

The TF agreed that the data submission deadline for data from 2021 is 1st December 2022. The reporting format for submissions remains the same (xlsx or txt), please use only one Excel sheet per file submitted (or one table per file for txt files). It is possible to have data from several sites in the same report file, but only within the same subprogramme. Do not include more than one subprogramme in the same file.

If possible, name the files:
countrycode/areacode_subprogrammecode_datayear (example SE_RW_2020.xlsx or SE14_RW_2020.txt)

New email address for submissions: im-database@slu.se

§ 5d Discussion- Data availability.

The Convention has asked the Task Forces to discuss data availability, and to investigate possibilities for making the data freely available, with the immediate aim of reporting status and concerns in time for the September meeting of the Convention. NFPs were asked to comment on restrictions for sharing data uploaded to the IM database.

- Germany- Not aware of any restrictions, but preferably on request rather than fully open download so it is known who is using it, and the work of site managers should be acknowledged as a condition of use.
- Austria- Data published at DEIMS, using Creative Commons non-commercial acknowledgement required licence. Noted that this meets the concerns raised by Germany.
- Czechia- Uncertain, but data providers should be involved in interpretation of data as they may have important background knowledge. Mr. Salar Valinia suggested that we develop a site description of each site including information such as bark beetle attacks, storms or so on. Open data should be open, not require us to consult with providers about permission. This kind of information could be made available through DEIMS.
- Russia- Uncertain but will investigate further.
- Spain- Data providers should be permitted involvement in projects using our data.
- Sweden- All IM data are already publicly available.

In summary, more information is needed from countries but so far at least there seems to be no major obstacle to the provision of open data.

§ 6 IM manual

The PC introduced the new version of the manual. This is available in PDF format from the new website, and involves only minor editorial changes, layout alterations and redrawn images. There are no changes in methodology from the previous version at the SYKE website.

§ 7 Extended IM

Mr. Salar Valinia updated the TF on the operationalisation of the Extended IM monitoring program. We are reaching out to all NFCs to see if there are sites in their country that could fit. The aim is to have it up and running during 2023. An initial discussion focussed on the risks of moving away from catchment-based Level 3 plots. While there was general agreement that filling the gaps in the network with more Level 3 plots would be ideal, funding these is very challenging (although it was noted by Mr. Pavel Krám that of course Level 1 and 2 plots also require funding, and even this can be problematic). Mr. Martin Forsius noted that new demands such as the NEC come along regularly and pragmatism is needed, these can also be a justification for funding. Mr. Ulf Grandin stated that discussions with other ICPs are underway to avoid duplicated efforts.

§ 8 Long term strategy 2020-2030

Mr. Ulf Grandin outlined the long-term strategy, covering the strengths and successes of the Convention, the remaining challenges, and the strategic priorities of the Convention.

§ 8b National reporting, Tour de table

Note: short written reports were also requested for the annual report.

- Germany- Two site managers are retiring next year. There is potential to upgrade to IM Level 3 an existing site which would be an ideal spot for the catchment approach, while also looking at stress to ecosystems due to climate change.
- Finland- Thanks were expressed to the PC team for a smooth handover from SYKE to SLU. Monitoring at new mire sites is starting, funded as part of the NEC reporting. The IM network is in good stable condition. Sites are heavily integrated with the eLTER network, with co-location of sites. New instrumentation can be obtained through eLTER connected funding, something to consider in other countries.
- Italy- 5 active sites and looking for new sites (connected with NEC reporting). Hoping to find sites where catchment studies are also possible.
- Austria- Celebrating 30 years of monitoring at Zöbelboden. Besides IM it is also part of other networks, e.g., EMEP, NEC, and new instrumentation has been installed at the site such as an eddy tower, soil chambers, and automatic runoff probe.
- Sweden- 4 sites, operational since 1996/9. This is working well, but there is some older and unreliable field equipment. Some funding from the EPA for new equipment was obtained, but more is needed to renew all the sites. Reports to IM, NEC, and also joining an eLTER project.
- Spain- A storm damaged the IM site, causing interruptions in some subprogrammes. Some equipment was lost and needs replacing.
- Estonia- 2 sites, operational since 1994. One is also in EMEP.
- Russia- Meteorological and biological data only but are looking for funds for chemistry.
- Ireland- No data from Brackloon since 2014, but starting again this year under NEC directive, and will be looking to expand. Noted that there is much overlap with Extended IM L1.
- Denmark – Starting 4 new stations for NEC monitoring, with the ambition that these will also be part of Extended IM.
- Poland- 8 IM stations, proposing 2 new stations. More information will be sent out soon. One is within a forest national park, and another is within a metropolitan area.
- Norway- 2 sites have now 50 years of data. Stable monitoring and financing.
- Czechia- 2 sites, and activities are funded by the EPA, but experiencing financial difficulties just now. The NEC directive helps with these discussions. The last few years have shown the results of bark beetle damage, requiring moves of some plots.

§ 8c The WGE – eLTER co-operation

Mr. Ulf Grandin outlined the draft MOU between WGE and eLTER and stressed that we should cooperate as much as possible when feasible, that there is no "we" versus "them". It is important to note that services to users will come as part of the eLTER RI and that we may potentially access these.

§ 9. Activities during 2021/22 – Information

Mr. Ulf Grandin informed about the most relevant ICP IM activities since the last Task Force meeting:

- ICP IM participated or was represented at 11 international meetings directly related to the IM core activities.
- The Programme Centre received the 2020 data from most IM sites, data are now stored in the ICP IM database.
- The listed scientific outputs in the WGE 2020-2021 work plan are about to be completed.
- The chairs and Programme Centre have together with a group of experts from the IM community developed and launched the extended IM programme.
- The chairs and Programme Centre have contributed to a WGE report on the revision of the Gothenburg protocol.
- Participated as expert in NEC Directive meetings.
- Establishment of the new Programme Centre, including revised web site and IM manual.

§ 10 Revision of the Gothenburg Protocol

Mr. Ulf Grandin introduced the topic and thanked Mr. Martin Forsius for writing an excellent report on the subject. It is important that we encourage other countries to join WGE networks and NEC can help with this, as our network is very useful for monitoring under the NEC directive/Gothenburg Protocol.

§ 11 The 2022/2023 WGE Work plan

There are fewer items on the workplan than normal right now as the move of the Programme Centre has taken much time. For the coming workplan, please contribute ideas, but the chairs and Programme Centre will also of course come with suggestions.

§ 12 Continued joint meetings with ICP Waters

The TF took the unanimous decision that we want to continue with joint meetings.

§ 13 Other business

Mr. Thomas Scheuschner stressed that we could look at how disturbances at sites speed up fluxes, and how they interact with e.g., climate change. He informed the TF about a CCE project on critical limits for ANC, with Mr. Thomas Dirnböck as the lead, who may be contacted about potential collaborations.

Mr. Thomas Scheuschner raised the issue of retirement, and how do we best deal with this while ensuring continuity when site managers change. It was noted that it can be hard to engage new

people in long term monitoring. It might be useful to hear from the people doing the job already and encourage potential replacements. Perhaps recently retired staff from the previous Programme Centre could write their story? This would also be good to include in the Annual report.

§ 14 End of meeting

Mr. Ulf Grandin thanked all for their participation and closed the meeting.

Annex I: Participants at the joint ICP Waters and ICP IM TF meeting, Spain, 10-12 May 2022

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ANNEX II

Agenda for the joint Task Force meeting of ICP Waters and ICP Integrated Monitoring, 10-12 May 2022

Meeting Venue: Miraflores de la Sierra.

Time schedule
Tuesday May 10

09:00 – 12:30 Joint meeting (Welcoming, reports and start of thematic sessions)
12:30 – 13:30 Lunch
13:30 – 17:00 Joint meeting (Thematic sessions)
Wednesday May 11
09:00 – 10:00 Joint meeting (continued thematic sessions)
10:00-12:30 Separate Task Force meetings
12:30 – 13:30 Lunch
13:30 – 19:00 Excursion
20:00 - Conference dinner
Thursday May 12
09:00 – 10:00 Presentations from other ICPs
10:00 – 12:30 Joint meeting (thematic sessions, conclusions).
12:30 Lunch
13:30 Departure, transport to airport and city of Madrid

Agenda

1. **Opening of the joint meeting and introductions (**Chairs ICP IM and ICP Waters**)**
2. **Meeting welcome by the hosts and organisers** (Mrs María José Alonso, Directorate General of Environmental Quality and Assessment, at Spanish Ministry of Ecological Transition and Demographic Challenge, and Mr. Pablo Sanjuanbenito, Director of Sierra de Guadarrama National Park. Regional Government of Madrid)
3. **Adoption of the agenda** (Chairs ICP Waters and ICP IM)
4. **General information about the meeting and excursion** (Manuel Toro Velasco)
5. **Opening presentations**: Air quality in Spain: challenges for the conservation of ecosystems (Rocío Alonso). Monitoring of the effects of air pollution on aquatic ecosystems in Spain under the NEC Directive and the ICP-Waters programs (Juan Alández, Alfredo Corrochano, Manuel Toro Velasco)
6. **Reports**
   a. Convention structure and recent CLRTAP activities (Krzysztof Olendrzynski, Secretariat)
   b. Reports from recent CLRTAP activities and Working Group on Effects (Isaura Rabago)
   c. Current issues ICP IM (Chairs ICP IM)
   d. Current issues ICP Waters (Chair ICP Waters)
7. **Thematic sessions**
   a. Acidification, thresholds, and recovery

i. Expected and unexpected long-term changes in Norwegian lakes, Heleen de Wit, Norway
ii. Recent trends in surface water chemistry of high-altitude Alpine lakes, Sandra Steingruber, Switzerland
iii. A new approach to modelling DOC trends, Don Monteith, U.K
iv. Suggestion of a harmonized acidification criteria for Nordic countries, Jens Folster, Sweden
v. Water quality on Georgian rivers and lakes, Marine Arabidze, Georgia
vi. Mixed drops from the Czech ICP Waters sites (Sulfur budgets, Ca and Mg isotopes, DOC trends), Jakub Hruška, Czechia
vii. Physicochemistry of the Lysina stream: What can we learn from high-frequency monitoring? Katherine X. Pérez Rivera, Czechia

b. Nitrogen

i. Nitrogen in surface waters: time trends and geographical patterns explained by deposition levels and catchment characteristics, ICP Waters report 2022, Øyvind Kaste, Norway
ii. Impact of nitrogen on the Sevan catchment area, Alina R. Zurnachyan, Armenia
iii. Nitrogen budgets and the link to carbon sequestration in Nordic forest ecosystems, Martin Forsius, Finland
iv. Impact of forecasted deposition and climate changes on the N balance - local results at the IM station and plans for a national scale analysis, Rafał Ulańczyk, Poland
v. Long-term N addition effects on DOC trends, Daniel Houle, Canada (online)

c. NEC directive

i. The NEC network in Italy: new developments and projects, Alessandra De Marco, Italy
ii. NECD- what to expect from the reporting 2022/2023, Salar Valinia (online)

d. Biodiversity, biological indices, and recovery

i. The 2022 thematic report on biological recovery, Gaute Velle, Norway
ii. Extended ICP IM- development of the program, Salar Valinia (online)
iii. Environmental monitoring at Sierra de Guadarrama National Park, Ignacio Granados, Spain

e. Other ICPs and common activities

i. ICP Modelling and Mapping/CCE, Thomas Scheuschner, Germany
ii. ICP Forests update (online), Kai Schwarzel, Germany
iii. Task Force for International Cooperation on Air Pollution (TFICAP), John Salter (online)
iv. Intercalibration of biological invertebrates, Christian Lucien Bodin, Norway
v. Chemical intercomparison, Cathrine Brecke Gundersen, Norway
vi. Possibilities to offer two more IM stations from Poland to ICP IM, Anna Degórska, Poland (online)
vii. Invisible part of the ICP Integrated Monitoring database: Hidden gem?, Pavel Kram, Czechia

f. Dynamic modelling

i. Update on CDM activities, Filip Moldan, Sweden (online)
ii. DAEMONS modelling, Martyn Futter, Sweden (online)

8. **The eLTER-WGE letter of co-operation**

9. **Next Task Force meeting**

10. **End of joint TF meeting**

Agendas for the separate Task Force meetings

Agenda – ICP Waters Task Force:

1. Workplan
2. Status and progress
3. Current and planned reports
4. Database and homepage
5. NEC Directive
6. Other issues
7. Proceedings, evaluation of the meeting
8. Adoption of the minutes

Agenda – ICP IM Task Force

1. Opening of the TF meeting
2. Approval of the agenda
3. Approval of the minutes from the 29th ICP IM Task Force meeting, 2021
4. The new ICP IM Programme Centre
5. The new IM database
6. The IM manual
7. The Extended IM - Information
8. Reports
9. Activities during 2021/22 – Information
10. The revision of the Gothenburg Protocol
11. Work plan and future work priorities
12. Next Task Force meeting
13. Other business
14. End of meeting