

Report on the Outcomes of the Twenty-first Session of the Scientific Advisory Committee (SAC21) on the EANET

24-25 November 2021 (online)

Presented by Chairperson of the SAC21

SAC21 Bureau Members (Agenda Item 3)

- The SAC21 decided a 3-year (2021-2023) fixed-term appointment of the SAC bureau members composed of a Chairperson, two Vice-chairpersons and a Rapporteur.
- Appointed new bureau members of the SAC18 are consisted as follows:
 - Chairperson: Mr. Mohan Kumar Sammathuria (Malaysia)
 - Vice-Chairperson: Prof. Atsushi Kume (Japan)
 - Vice-Chairperson: Mr. Virasack Chundara (Lao PDR)
 - Rapporteur: Dr. Hu Jingnan (China)

Progress of the EANET since SAC20 and Draft Financial Report in 2020 (Agenda Item 4)

- Organizing EANET meetings (IG22 and SAC20), Working Group Meetings, and National Awareness Workshops in Myanmar and Malaysia, as well as various communication activities. On administration, the Secretariat developed the Small-Scale Funding Agreement (SSFA) with the RRC.AP/AIT as well as with the NC.
- Including 17 core activities and 9 non-core activities under 5 EANET objectives. The implementation status, accomplished outputs and expected outputs were delivered to SAC participants for each activity.
- The Financial Report in 2020 was explained.

● **The Session acknowledged the draft progress report.**

Adoption of Data Report 2020 (Agenda Item 5)

Wet and dry deposition monitoring data in 2020

- As for wet deposition monitoring, data from 59 sites were expected to be submitted to the Data Report 2020. As for pH, Japan, part of Russia, and part of China had low pH sites. As for acidic substances, many sites demonstrate decreasing trends, while some sites demonstrate rapidly increasing trends.
- As for dry deposition (air concentration) monitoring, monitoring results in 41 sites by filter-pack method, 34 sites by automatic monitoring, and six sites by passive sampler were compiled in the Data Report 2020.

Soil/vegetation/inland aquatic/catchment scale monitoring data in 2020

- As for soil and vegetation monitoring, observation of tree decline was conducted in China and Japan in 2020. No pronounced change has been observed in the forests' condition.
- As for inland aquatic environment monitoring, the data of 12 sites from 6 countries were submitted in 2020. In addition to the pH 4.8 endpoint method according to the new technical manual (2020), using gran's titration method should be encouraged to determine alkalinity.
- As for catchment-scale monitoring, data from new regular monitoring sites in La Mesa Watershed, Philippines, has been continuously submitted. Recovery from acidification/nitrogen saturation seemed to be clear as the long-term trend in the Lake Ijira catchment.

The Session in principle adopted the Data Report 2020.

Adoption of Report on Inter-laboratory Comparison Projects 2020 (Agenda Item 6)

- **Wet, dry, soil and inland aquatic environment results in 2020**
- For ILC on wet deposition, 32 participating laboratories submitted their analytical results of the artificial rainwater samples to the NC. 93.1% and 88.7% of submitted data met the Data Quality Objective (DQO) of EANET for high and low concentration samples.
- For ILC on dry deposition, 23 participating laboratories submitted their analytical results of the filter samples to the NC. 75.0% and 60.0% of submitted data met the DQO of EANET for large and small quantity samples.
- For ILC on soil, 14 laboratories from 7 countries participated. Although the ratio of outliers was within the usual range, there were both random and systematic errors for factors of variabilities in measurements.
- For ILC on the inland aquatic environment, 23 participating laboratories submitted their analytical results of the artificial inland water samples to the NC. 80.0% of submitted data met the DQO of EANET.

● **The Session adopted Report on the Inter-laboratory Comparison Projects 2020.**

Overview of the Updated National Monitoring Plans of the Participating Countries (Agenda Item 7)

- It was pointed out that monitoring activities on PM2.5 and ozone would be important to evaluate, given the region's current situation, and should be extended to other countries. The possibility of expanding the monitoring sites for the particulate matter in the EANET was confirmed.
- It was clarified that the number of sites for PM2.5 monitoring has increased since 2015 due to support through the Integrated Programme for Better Air Quality in Asia (IBAQ Programme) of the Clean Air Asia (CAA). Both EANET and Clean Air Asia are currently using the data from these sites.

 **The Session acknowledged the updates on the overview of the National Monitoring Plans of the Participating Countries.**

Consideration of the Preliminary Fourth Draft Text for Supplementary Document (Annex) to the Instrument for Strengthening the Acid Deposition Monitoring Network in East Asia (EANET) from scientific and technical viewpoints [Agenda Item 8]

Major discussion included

- Some comments were addressed on the necessity of preambles and possible modification of Item 5.
- It was pointed out that different types of PM, including PM2.5, DSS (PM10), TSP, and PM components, should be included in the scope.
- It was suggested that GHGs and species related to climate change, including CH4 and BC, should not be included as new items because they are not priority air pollutants.
- NC clarified that methane has a function in controlling atmospheric OH radicals and ozone concentration levels, and therefore, methane would be closely related to air pollution.
- NC suggested that NMVOC be changed into VOCs to include methane.
- It was suggested that elemental carbon and organic carbon could be included as targets of PM. BC, as SLCP, should be added. The adding of the scope is to address related air pollution problems which may bring co-benefits to reduce climate substance, rather than to expand to GHG.
- It was suggested that the definition of research activities in the attachment table was too narrow. Therefore, it should not be narrowed down from original activities.
- On Item 3, it was suggested that “and research activities should be added after “data reports” in paragraph 2 of Item 5 of the Instrument because the research activities should be used to get more scientific assessments.
- It was suggested that “ozone” should be shown in the table because “atmospheric environment-related substances” are defined as chemical substances, and all the monitoring items have been monitored at the surface. In the note, “surface” ozone or “tropospheric” ozone could be added.
- A concern was raised that not many countries have the available infrastructure for tropospheric ozone measurements.

 **The Session considered and acknowledged this Agenda item and provided comments, suggestions, and recommendations from scientific and technical viewpoints for consideration and approval at the IG23 of EANET.**

Consideration of EANET Project Fund and Project Guideline from scientific and technical viewpoints [Agenda Item 9]

Consideration of the Draft Work Programme and Budget of the EANET in 2022 from scientific and technical viewpoints [Agenda Item 10]

Adoption of the Third Revision of Summary of the Twentieth Anniversary of the EANET from scientific and technical viewpoints [Agenda Item 12]

 The Session acknowledged the Guideline and WP&B 2022, and adopted the Summary of 20th Anniversary from scientific and technical viewpoints for consideration and approval at the IG23 of EANET

Consideration of the Progress of Development of the Fourth Periodic Report on the State of Acid Deposition in East Asia (PRSAD4) [Agenda Item 11]

- Major discussion included:
 - It was pointed out that descriptions and conclusions on health impact studies in the PRSAD4 Draft, such as country-specific mortality for PM2.5, have been controversial. Therefore, those expressions should be removed, in particular, their actual number of burden diseases, mortality rates should not be shown. It was pointed out that the health risk assessment shown in the PRSAD4 is not only related to air pollution but also other pollutants.
 - It was clarified that the estimated premature mortality for PM2.5 was cited from the Global Burden of Disease Study (GBD), which has been conducted with the World Health Organization (WHO) and is considered as the most authorized risk assessment. It was also emphasized that the methodologies used in GBD have already been authorized in the relevant scientific fields. The results from GBD have been mentioned in WHO and news of media.
 - It was informed that the Drafting Committee (DC) discussed this issue and finally removed each number of premature mortalities in each country from the draft PRSAD4. According to the discussion, it was agreed that country-specific data should not be included, so the total number of premature mortalities for the whole region was included. Currently, only the total numbers of premature mortalities for ozone and PM2.5 were introduced, citing GBD in the draft. Thus, the current version has already been improved as appropriate according to the discussion at the DC and Lead Authors Meeting.

● **The Session acknowledged this Agenda item from scientific and technical viewpoints with modification according to comments and proposed actions of the Session for consideration and approval at the IG23 of EANET.**

Consideration of the Draft Report of Terminal Review of Medium Term Plan for the EANET (2016-2020) from scientific and technical viewpoints [Agenda Item 13]

Major discussion included:

-  It was informed that the EANET would refer to the recommendations from this report to achieve EANET's future activities.
-  It was suggested that the EANET connect with the United Nations Economic Commission for Europe (UNECE), the Secretariat of CLRTAP, for further collaboration.
-  It was informed that the EANET had already started working on the recommendations from the last MTR (2019-2020), and some actions, such as the implementation of the Project Fund mechanism, should be reflected soon.

-  **The Session considered and acknowledged the Draft Report of Terminal Review of Medium Term Plan for the EANET (2016-2020) and provided comments, suggestions, and recommendations from scientific and technical viewpoints for consideration and approval at the IG23 of EANET.**

Consideration of the Draft Revision of Medium Term Plan for the EANET (2021-2025) [Agenda Item 14]

- The Session considered and acknowledged the Draft Revision of Medium Term Plan for the EANET (2021-2025) for consideration and approval at the IG23 of EANET.**

Consideration and Adoption of the Reports of the Task Forces of the Scientific Advisory Committee (SAC) [Agenda Item 15]

- The Session acknowledged the Report of the Task Forces of the SAC.**

Updates on Research Activities of the EANET [Agenda Item 16]

Major discussion were as follows:

- It was informed, the effects of climate change on the stream discharge for catchment study may differ between the various EANET countries. Changing discharge may affect the sulfur discharge. For example, in Thailand, increment of sulfur and decrease of pH were observed in the stream. Therefore, EANET needs to study more to explore the impacts of climate change on stream discharge for catchment studies.
- It was informed that EANET does not have a strict manual for catchment studies but only has guidelines. The existing manuals for other monitoring items can be referred to. Using a strict manual is not relevant as the conditions vary in each country, and local climate and geographical specifications need to be considered.

 **The Session acknowledged the Progress of the Catchment Studies in the EANET.**

Updates on Relevant Scientific Activities [Agenda Item 17]

● Major discussion included:

1) Observational Studies of PM_{2.5} Components and EC/OC in EANET Countries

- In regard to higher PM_{2.5} concentrations at Niigata-Maki, there were four sources that dominated. It was informed that PMF is not good for episodic emission estimations of pollutants. Probably CMB can be a good method for source apportionment, including back trajectory analysis. SOA formation may also reason for high concentration.
- It was informed that there was some in-kind contribution from some government. For example, Thailand supported monitoring facilities and chemical analysis in the study.
- It was informed that emissions from motorcycles could also be included in the future estimation of sources.
- It was pointed out that vehicle emission has highly contributed to the air quality in Thailand because the research was done before the lockdown of COVID.

2) Report of the EANET Emission Inventory Workshop in 2021

- It was informed that capacity building, such as the Emission Inventory Workshop responds to high demands from Participating Countries, should be organized again in the future.

3) Progress of the Joint Research Activities on Model Inter-Comparison Study in Asia (MICS-Asia)

- For the question about the online coupled meteorology-chemistry model participated in MICS-Asia, it was answered that WRF-Chem, WRF-CMAQ, and several other models participated in the inter-comparison in phase 3. Reference papers will be informed by NC if necessary.

4) Development of the EANET Research Portal on the EANET Website

● **The Session acknowledged this agenda.**

Action required

 The IG23 is invited to:

- Review the Report on the Outcomes of SAC21, and may wish to discuss, comment, provide appropriate guidance for further development of the activities of the SAC and endorse the Report, as appropriate.

Thank you for your attention!!