

# EANET NEWSLETTER



ACID DEPOSITION AND AIR QUALITY MANAGEMENT  
FROM DATA TO POLICY



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## REGIONAL COOPERATION FOR CLEAN AIR

In the second half of 2024, the EANET continued to expand its efforts against acid deposition and air pollution through monitoring, capacity-building, and outreach activities. Discussions on its next Medium-Term Plan for 2025–2030 were also initiated.

In November 2024, the 26th Intergovernmental Meeting in Kuala Lumpur, Malaysia, approved the Core Budget for key meetings and monitoring activities and also approved 12 EANET Projects for 2025. These projects focus on capacity building, public awareness, monitoring, and research activities emphasizing expanded collaboration and innovative approaches to air quality monitoring and policy support.

**Curious about what took place in the past months and what is coming next? Discover more inside!**



*By Bert Fabian  
Coordinator, Secretariat for the EANET*

*Looking ahead to the next five-year plan  
for the EANET (2026-2030)*

The next five-year plan, 2026-2030, for the EANET is an important period as it coincides with the critical period of achieving the Sustainable Development Goals 2030. Air quality is referred to in SDG targets 3.9 and 11.6, that is to “Reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination” and “Reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management”, respectively.

Air pollution continues to be a major issue in the region, especially during the dry and colder seasons, which coincides with agricultural waste-burning practices as well. Air pollution from transport, while some significant gains have been achieved due to cleaner fuels, and the sheer increase in the number of vehicles on the road contribute substantially as well to the urban air pollution problem. Ground level Ozone and Volatile Organic Compounds (VOCs) are also becoming a concern. Other pollutants influencing air pollution like Nitrogen may also be considered. In addition, the impacts of climate change on air pollution and weather, and vice versa are exacerbating.

These are some of the issues that will need to be considered in EANET’s next five-year plan. Capacity building – a longstanding focus of the EANET – particularly for national, provincial, and city officials will have to be scaled up to substantially improve capacity, particularly for the low- and middle-income countries in the EANET.

Strengthening institutions on atmospheric environmental management including meteorology is also still needed particularly those in the provinces and cities. Air quality monitoring and impact assessment technologies have greatly improved since EANET was conceptualized in the late 1990s. These include the use of low-cost sensors, remote sensing, and satellite technologies. More and more cities and private institutions are using low-cost sensors and private firms aggregating and sharing data online. EANET has started looking at this issue and developing its own guidance for its member countries, but more research and activities may have to be integrated into its next five-year plan.

However, just like any other organization, EANET’s activities will be bound by the resources that it is able to raise. The countries themselves are providing the resources but may not be enough to fully support the implementation of its next five-year plan. As such, it will be important to develop more partnerships and mobilize additional resources to support EANET activities and projects.





# The Twenty-sixth Session of the Intergovernmental Meeting on the EANET



The Twenty-sixth Session of the Intergovernmental Meeting (IG26) on the Acid Deposition Monitoring Network in East Asia (EANET) was held in Kuala Lumpur, Malaysia, from 27 to 28 November 2024. All the 13 Participating Countries of the EANET were represented in person in the Intergovernmental Meeting. Overall, there were about 80 participants from the EANET, engaged in key discussions related to the network's 2025 activities and air quality and acid deposition challenges in Northeast and Southeast Asia.

Hosted and chaired by the government of Malaysia, the IG26 started with Welcome Remarks delivered by Datuk Nor Yahati binti Awang, Deputy Secretary General of Malaysia's Environmental Sustainability at the Ministry of Natural Resources and Environmental Sustainability (NRES). Opening Remarks followed by Dr. Toshimasa Ohara, Director General of the Asia Center for Air Pollution Research (ACAP), and Mr. Bert Fabian, Coordinator of the Secretariat for the EANET.

Datuk Nor Yahati highlighted Malaysia's commitment to tackling air pollution through initiatives such as the National Clean Air Action Plan (2025–2040). Dr. Ohara emphasized the expanded scope of EANET activities, and Mr. Fabian underscored the importance of the science-policy interface in EANET's mission. The session elected Malaysia as Chairperson, Thailand, and Mongolia as Vice-Chairpersons, and Japan as Rapporteur.

In addition to the Core Budget of the EANET for its ongoing activities focused mainly on monitoring, and supporting its meetings, the IG26 approved twelve EANET Projects under the [EANET Project Fund](#). The Projects focus on capacity building, public awareness, monitoring and research activities, applied to various issues such as Nitrogen management, Volatile Organic Compounds (VOCs), innovative monitoring technologies including low-cost sensors and satellite monitoring, and understanding the effects of acid deposition on ecosystems, among others. A total of US\$300,000 mainly coming from Japan ([MOEU](#)), and with co-financing from the Republic of Korea ([NIER](#)), the Philippines ([EMB](#)), and China ([Fudan University](#)), was allocated for these initiatives.

In addition to these key decisions, the IG25 approved several important documents, such as the Work Program and Budget of the EANET in 2025, including the organization of key meetings in 2025 such as the Working Group Meeting in 2025 (WG2025), the 24th Scientific Advisory Committee (SAC25) and the 27th Session of the Intergovernmental Meeting on the EANET (IG27). The IG26 also approved the process of development of the EANET's next Medium-Term Plan (2026–2030) which will include several consultations and meetings among Participating Countries in 2025, emphasizing expanded collaboration and innovative approaches to air quality monitoring and policy support.

[Read the Report of IG26](#)

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# Highlights from the Twenty-fourth Session of the Scientific Advisory Committee (SAC24) on the EANET



The Twenty-fourth Session of the Scientific Advisory Committee (SAC24) on the EANET took place from October 29 to 31, 2024, in Seoul, Republic of Korea and online, hosted by the Ministry of Environment, Republic of Korea, and the National Institute of Environmental Research (NIER), Republic of Korea. The session gathered over 55 representatives from the 13 EANET Participating Countries, along with the Network Center and the Secretariat for the EANET, to discuss the network's recent achievements, assess key reports, and contribute suggestions for the upcoming Medium-Term Plan (MTP) of the EANET (2026-2030).

EANET reported substantial progress in its 2023-2024 core activities and project activities. This included advancements in both acid deposition research and broader air quality management issues, reflecting the network's expanded scope. The Secretariat and Network Center highlighted successful activities, such as capacity building, project implementation and workshops to enhance awareness of air pollution challenges across East Asia.

They also presented updates on EANET's acid deposition and air quality monitoring, PM<sub>2.5</sub> characterization, and ecosystems impact assessment. Among others, findings emphasized the effects of nitrogen on ecosystems and identified major pollution sources like biomass and plastic combustion. Pilot trials for a Hybrid Air Quality Monitoring Network revealed challenges in using Low-Cost Sensors, necessitating the need to further review the guidelines for low-cost sensor use in conventional air quality monitoring. A review of emission inventories and source apportionment studies in Southeast Asia underscored the need for further improvement and standardizing methodologies.

A central aspect of SAC24's discussions involved reviewing and adopting essential EANET reports. The 2023 Data Report provided an in-depth overview of monitoring data on wet and dry deposition, soil and vegetation, and inland aquatic environment in the 13 Participating Countries.



Meanwhile, the Inter-laboratory Comparison (ILC) Report documented quality assessments across laboratories within the network, ensuring consistent analytical standards. Updated National Monitoring Plans were also reviewed, underscoring countries' commitments to refining their data collection and monitoring capabilities. The adoption of these reports marks a significant step forward, providing reliable data that will support scientific research and policy decisions across the region.

The SAC24 engaged in forward-looking discussions regarding the next Medium-Term Plan (MTP) of EANET (2026-2030). Participating Countries offered valuable insights aimed at strengthening the monitoring network, expanding capacity-building efforts, and refining targeted pollutants in line with regional environmental priorities.

Suggestions included developing sustainable monitoring frameworks that integrate advanced data collection methods, such as low-cost sensors and satellite data. Participants also emphasized the need for enhanced monitoring of specific pollutants like sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), nitrogen oxides (NO<sub>x</sub>), and PM<sub>2.5</sub>, while strengthening regional collaborations to align EANET's objectives with international air quality standards. These insights will serve as a foundation for shaping EANET's future strategies and objectives.

In conclusion, the SAC24 underscored EANET's commitment to enhancing scientific collaboration across East Asia. The discussions and decisions during this session laid the groundwork for furthering EANET's mission in air quality management and pollution control. Looking ahead, EANET's focus on expanding its monitoring capabilities and strategic planning will be instrumental in addressing the region's growing environmental challenges.

Recommendations from the SAC24 will be further considered in November 2024 by the 26th session of the Intergovernmental meeting (IG26) on the EANET, to be held in Kuala Lumpur, Malaysia.

Read the [SAC24's Report of the Session](#).

View the meeting photos on [Flickr](#).

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## EANET's 25th Senior Technical Managers' Meeting: Key Outcomes and Discussions



The 25th Senior Technical Managers' Meeting of the EANET took place on August 28-29, 2024, in Bangkok, Thailand, hosted by [the Network Center for EANET](#). The meeting brought together 30 Senior Technical Managers from the 13 Participating Countries to review the progress of the Data Report 2023 and the 2023 Report of the Inter-laboratory Comparison Project and discuss National Monitoring Plans in 2024, as well as future directions for air quality monitoring.

The meeting began with opening remarks from the Network Center and the Secretariat for the EANET. A report on the progress of EANET since the last Senior Technical Managers' Meeting (STM) was presented, covering advancements in various monitoring areas, including wet and dry deposition, soil, vegetation, and aquatic environments. Following this, attendees reviewed the preliminary draft Data Report 2023, which details findings on environmental conditions across different matrices.

The evaluation of the 2023 Inter-laboratory Comparison (ILC) Project was also discussed, focusing on wet and dry deposition, soil, and inland aquatic environments. The meeting also focused on presentations related to National Monitoring Plans and current monitoring activities of the Participating Countries. Each country shared updates on air concentration monitoring and technical challenges, including equipment issues and the need for continued maintenance support.

Discussions covered future developments in EANET's monitoring and analysis activities, with an emphasis on expanding the monitoring network and integrating cost-effective, hybrid air quality monitoring systems. Participants also addressed the potential for capacity-building efforts related to volatile organic compounds (VOCs) and nitrogen management.

The Data Report 2023 revealed decreasing levels of sulfate ( $\text{SO}_4^{2-}$ ) and nitrate ( $\text{NO}_3^-$ ) across many monitoring sites, signaling a positive recovery from acid deposition in the region. However, ongoing monitoring is essential to confirm these trends. The meeting emphasized the importance of data sharing, timely submissions, and continuous QA/QC of data.

The STM meeting concluded with a summary of National Monitoring Plans by the Network Center, highlighting the progress made and identifying areas for future development. Dr. Meng Fan, Deputy Director General of the Asia Center for Air Pollution Research (ACAP), praised the Participating Countries for their continuous efforts and contributions to improving the EANET data quality. He called for ongoing collaboration to strengthen EANET's role in combating acid deposition and air pollution in East Asia.

Find out more about [EANET data](#).  
Read the [meeting report](#).

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# EANET Working Group 2024: Reviewing Achievements and Planning Activities for Better Air Quality in Northeast and Southeast Asia



The Working Group Meeting on the EANET held its 2024 session virtually on 20-21 August, focusing on reviewing the progress of activities in 2023 and 2024, preparing the next Medium-Term Plan (MTP) for EANET (2026-2030), and considering new projects for 2024. The session brought together over 50 representatives from the Participating Countries to assess achievements, discuss strategic directions, and plan future projects and activities.

The Working Group began by reviewing the significant achievements in the last quarter of 2023 and the first half of 2024, highlighting key activities.

The Secretariat and Network Center for the EANET presented Draft Reports on EANET Core Activities and Projects for 2023 and 2024. The Secretariat outlined activities including organizing the 23rd Session of the Scientific Advisory Committee (SAC23), the 25th Intergovernmental Meeting (IG25), and the Informal Meeting on the Initial Preparation of the Draft Medium-Term Plan (2026-2030) (IM2024). Highlights included the EANET Regional Awareness Workshop and National Awareness Workshops in China and Cambodia, as well as updates to the EANET website and communications.

The Network Center reported on its activities, such as preparing National Monitoring Plans, the EANET Data Report, technical manuals, and QA/QC activities. EANET Project Activities for 2024 covered studies on atmospheric deposition, VOCs capacity building, Low-Cost Sensors, PM2.5 source apportionment, and various meetings and webinars on air quality and nitrogen management. The Secretariat also reported on a project assessing emissions inventories and source apportionment in Southeast Asia.

A major focus of the session was the development of the next MTP, setting the strategic direction for 2026-2030. The Secretariat presented the Draft Annotated Outline for the Medium-Term Plan (MTP) for EANET (2026-2030) and the Draft Partnership and Resource Mobilization Strategy. An overview of the proposed content for each section of the outline was provided and the steps for drafting the MTP were discussed. The session invited comments and suggestions for improvement.



Key points of the discussion included the need to address emerging challenges in air quality management. Recommendations were made for better data utilization in policymaking, incorporating cost-benefit analyses and considering the key results from the Draft Partnership and Resource Mobilization Strategy. The Secretariat will integrate feedback from the WG2024 and refine the outline which will be submitted for review by the SAC24 in October in Seoul, Republic of Korea, and for consideration at the IG26 in Kuala Lumpur, Malaysia, in November 2024.

A total of 11 Project Plans were presented to the Session.

The Network Center and the Secretariat explained the proposed projects including studies on atmospheric deposition effects, VOC capacity building, and feasibility studies for new monitoring technologies. Other projects focused on analyzing precipitation and particulate matter, webinars for emission inventories, and strengthening nitrogen cycle management supporting emission inventory development in Southeast Asia and improving regional capacity building for air quality monitoring and assessment.

In the discussion, various representatives highlighted key points: the need for enhanced capacity building alongside pollution control, the value of satellite monitoring, support for field studies and VOC projects, and the importance of linking project activities to the upcoming Medium-Term Plan (MTP). There were also suggestions to prioritize capacity-building activities, as well as to include additional meteorological factors in projects related to particulate matter. The 2024 session of the EANET Working Group highlighted significant progress in 2023, set the stage for the next MTP, and laid out new initiatives for 2024.

Further discussions on the proposed Project Plans, among other important agenda items, will be held during the Twenty-fourth Scientific Advisory Committee (SAC24) meeting on the EANET to be organized from 29 to 31 October 2024, in Seoul, Republic of Korea.

Read the [Report of the Session](#).

Find out more about EANET's [Project Fund and Project Activities](#).



*Some participants at the virtual WG2024 meeting*

*Photo credits: Photo of Bangkok, Benchakitti forest park [by Andre Bestman \(2023\)](#); all other photos, all rights reserved to EANET.*



## Building Capacity for Volatile Organic Compounds Monitoring: EANET Successfully Concludes the 2024 Annual Meeting and Training



In October 2024, ACAP, serving as the Network Center (NC) for the EANET successfully concluded both the Volatile Organic Compounds (VOCs) Project's Annual Meeting and Training at the Center for Environmental Science in Saitama (CESS), Japan. The NC for the EANET is implementing the Project Capacity Building in Promoting VOCs in the EANET, approved by the Twenty-fifth Intergovernmental Meeting (IG25) in 2023, with the financial support of the Ministry of the Environment, Japan (MOEJ).

The VOCs Annual Meeting took place at the Center for Environmental Science in Saitama (CESS), in Saitama, Japan, on October 22nd and 23rd 2024 and gathered the VOCs Advisory Group members as well as members from the Participating Countries including Cambodia, China, Mongolia, the Philippines, and Viet Nam, responsible for overseeing this project. The goal of the meeting was to review the progress to date and develop a detailed plan for 2025 focusing mainly on monitoring methods, sites, and timing.

The Annual Meeting was conducted both in-person at CESS and online. Opening remarks were delivered by Dr. Mitsuo Uematsu, President of CESS, and Dr. Toshimasa Ohara, Director General of the Asia Center for Air Pollution Research (ACAP), moderated by Dr. Meihua Zhu, Chief Senior Researcher of the Planning and Training Department of ACAP. Each Participating Country shared their project progress in 2024 and their monitoring and related capacity-building plan.

During the meeting, Dr. Soo Ran Won, Department of Environmental Science and Engineering, Ewha Womans University, gave a special talk entitled: a Research Introduction on the "First Measurement Report for Volatile Organic Compounds' Characteristics during winter in Ulaanbaatar, Mongolia". During the Annual Meeting, participants reviewed the progress of the project's activities in 2024 and discussed the activity plan for 2025.

On the second day, on October 23rd, a site survey of an VOCs' instrument manufacturer was conducted at GL Sciences, Saitama prefecture, Japan. The site survey included an introduction to GL Sciences and to their support system, air analysis instruments, and related products.



It also consisted of a laboratory tour and presentation of various equipments' usage such as gas chromatography/mass spectrometry (GC/MS) with canister concentrator, GC-MS with thermal desorption, sampling and related tools, and air sampler for Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS).

The Training Program for VOCs Monitoring and Measurement was held at the Center for Environmental Science in Saitama (CESS), Japan, from October 21st to 25th 2024. To conduct the training in a cost- and time-efficient manner, online lectures were provided to the trainees prior to the hands-on training in Japan. The proposed curriculum for online training consisted of three parts: a background introduction to VOCs, an introduction to VOCs' monitoring methodologies, and an introduction to case studies on VOCs' monitoring. Five participants from Cambodia, Mongolia, the Philippines, and Viet Nam, in charge of VOCs monitoring and lab work and part of EANET VOCs project, participated to the training. The VOCs Advisory Group members, CESS, and the NC actively provided support.

On the first two days, Mr. Kouki Sasaka, Group Reader, Atmospheric Environment Group, CESS, and Dr. Yujiro Ichikawa, Researcher, Atmospheric Environment Group, CESS, provided lectures on canister and flow controller including on canister cleaning, flow controller cleaning and flow adjustment, canister sampling, dilutor, preparation of standard gas, pre-concentrator and GC/MS. From October 24 to the afternoon of the 25th, a representative from Nishikawa Keisoku Co., Ltd. presented a lecture on standard and sample measurement (Preconcentrator-GC/MS), data analysis, and the daily maintenance of GC/MS. In the afternoon of October 25, a lecture on air sampling pumps, sorbent tubes (both active and passive), and Low-Cost Sensors was shared by a representative of Sibata Scientific Technology Ltd. During the closing session, Dr. Akio Imai, Research Director at the CESS presented the completion certificate to the trainees on behalf of the program organizers.

The successful conclusion of the VOCs Project's Annual Meeting and Training in 2024 strengthens EANET countries' capacity to monitor and manage VOC emissions. Through collaboration, hands-on training, and advanced monitoring technologies, the initiative sets a solid foundation for improving air quality monitoring in the region.



*Participants at the Annual VOCs Meeting and during the field visit to GL Sciences*



*VOCs trainees from Cambodia, Mongolia, the Philippines, and Viet Nam at the Center for Environmental Science in Saitama, and with their completion certificates*

### **Useful Resources**

- [View the photos on Flickr](#)
- [Watch the online lectures of the VOC training on YouTube](#)
- [Access the training presentations](#) (Reproduction in whole or in part of the documents is prohibited without prior written consent from the organizer).

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# EANET Online Workshop on the Utilization of Low-Cost Sensors for Air Quality Monitoring: Recommendations and Strategies



The [EANET Online Workshop on the Utilization of Low-Cost Sensors for Air Quality Monitoring: Recommendations and Strategies](#) took place on 6 November 2024. Organized by the Network Center for the EANET, it gathered 152 participants, from the EANET Participating Countries and beyond, to discuss the utilization of Low-Cost Sensors (LCS) in Asia.

Dr. Fan Meng, Deputy Director General, the Asia Center for Air Pollution Research, [ACAP](#) (the Network Center for the EANET), delivered Opening Remarks. He highlighted the significance of the hybrid method which consists of using both conventional air quality sensors and LCS in addressing monitoring resource constraints. However, he emphasized that accuracy and reliability issues persist, requiring calibration, validation, and quality control to integrate LCS data effectively. He underlined the workshop's objectives to share LCS application insights, technical knowledge, data visualization, and discuss sustainable network opportunities within the EANET region.

Dr. Tomoki Nakayama, from [Nagasaki University](#), shared a presentation on air pollution monitoring using Low-Cost Sensors, focusing on projects in India, and in the ASEAN and African regions. In collaboration with Nagoya University and others, his team measures pollutants such as PM<sub>2.5</sub> and CO. These sensors, co-developed with Panasonic Corp., detect particles via light scattering and are effective even under diverse environmental conditions.

Dr. Justin Sentian, [Universiti Malaysia Sabah](#), presented the deployment of LCS air quality sensors in schools, an initiative funded by [UNICEF](#), in partnership with Malaysia's Environmental Protection Department. These sensors, part of the Air Quality Monitoring in Schools ([AQUAMS](#)) program, aim to monitor air quality and promote environmental awareness among students. In the first phase, sensors were installed in five schools, and data on pollutants and weather conditions were gathered.

Dr. Nguyen Viet Hoai, [Vietnam National University](#), presented the "Building Equality Monitoring Capacity in Southeast Asia" project which aims to enhance air quality monitoring in Thailand, Laos, and Viet Nam. Key goals include deploying low-cost PM<sub>2.5</sub> sensors, raising public awareness, providing real-time data, and identifying pollution hotspots. Nearly 100 sensors have been installed across the region, supporting data analysis and empowering local authorities and communities.



Dr. Maria Obiminda Cambaliza, [Ateneo de Manila University](#), presented [IGAC-MANGO](#), a research initiative addressing air pollution in Southeast Asia. The project uses Low-Cost Sensors to measure PM2.5 exposure and its health impacts, particularly in high-risk groups. She also highlighted the Health Investigation and Air Sensing for Asian Pollution (Hi-ASAP) project, which started in 2019, aiming to gather data on pollution levels and health effects.

Dr. Akie Yuba, a Senior Researcher from ACAP, provided a report on LCS technical studies in Viet Nam and Myanmar, which were carried out as part of EANET Project Activities. In Hoa Binh, Viet Nam, five LCS units were installed, with a specific focus on PM2.5 and other parameters. In Yangon, Myanmar, LCS units, specifically GBiot and Haz Scanner, were utilized for monitoring PM2.5, O3, NO2, and meteorological data during both monsoon and non-monsoon seasons. A good correlation was observed in the data, though different values were displayed in the slopes, emphasizing the need for blackout preparedness to prevent electricity voltage fluctuations. Dr. Yuba also explained the draft contents of the guidelines for establishing HAQMN and the manual for low-cost sensor system operation.

The panel discussion covered the various challenges and approaches to air quality management across different countries, highlighting the role of LCS in both developed and developing countries. Key questions explored during the discussion included: what are the key local air quality issues in your country? How will citizens and communities be kept informed about air quality data? Is there adequate infrastructure, such as internet and power supply, to support an LCS network?, and How do governments and local authorities intend to use data from this network for policymaking? Additionally, What funding and support will be required to ensure the sustainability of the LCS network?

The panel discussion highlighted several common challenges in air quality management. These included infrastructure and connectivity issues, particularly in developing countries where limited access to power and the internet can undermine the reliability of LCS networks. Funding and sustainability were also major concerns, as many countries depend on international financial support and technical assistance for LCS implementation. Additionally, the importance of public awareness and communication was emphasized, with some countries planning to automate alerts about high pollution levels through platforms like social media. Lastly, the panel underscored the need for regular calibration and maintenance of LCS networks to ensure data accuracy, especially in resource-constrained settings.

The panel concluded that while LCS offers affordable and scalable options for air quality monitoring, its effectiveness depends on sustained funding, accurate data calibration, and enhanced public awareness. Building regional and international collaborations remains essential for addressing air pollution in the Southeast and East Asian regions.

- Read the Panelists' Presentations:
  - [Session 1-2 by Dr. Sentian](#)
  - [Session 1-3 by Dr. Hoai](#)
  - [Session 1-4 by Dr. Cambaliza](#)
  - [Session 2 by Dr. Yuba](#)

*Photo credits: rice field at daytime by [Hikarinoshita Hikari](#) (2019).*



# Shaping Future Leaders: The Fellowship for Building Leadership in Atmospheric Environment and Air Quality Management in East Asia



On August 9, 2024, the EANET successfully concluded its Fellowship Program with a closing session held both in-person at Fudan University, in Shanghai, and online. The event marked the culmination of months of dedicated research and collaboration aimed at advancing air quality management and atmospheric science across the East Asian region.

The Fellowship for Building Leadership in Atmospheric Environment and Air Quality Management in East Asia is a program organized by the Network Center for the EANET, hosted by the Asia Center for Air Pollution Research (ACAP), in collaboration with Fudan University (FDU), in Shanghai, China, and Clean Air Asia (CAA). It aims to strengthen the research capacity of young government officers and researchers in the Participating Countries, particularly in developing countries. It seeks to promote research and scientific policy-making while developing leadership skills among EANET participants.

The program encourages interdisciplinary research and enhances cooperation between academia and government to address complex challenges in the atmospheric environment in the EANET region.

Additionally, it provides a platform for the next generation of researchers and government officials to engage in integrated discussions and reflections, preparing them to manage EANET in the future.

Open to participants from the 13 EANET Participating Countries, the program was held for six months in 2024 including two alternate on-site research sessions at Fudan University in Shanghai, China, and the Network Center for the EANET in Niigata, Japan, from July 15 to August 9, 2024. Five participants were selected, engaging in monthly online meetings and intensive on-site training from July 15 to August 9, 2024, with progress reporting and discussions with designated supervisors in both China and Japan.

The on-site session started in Japan from July 15 to July 27, 2024, followed by China from July 28 to August 10, 2024.

In Japan, the first day started with the fellows' introduction to the Research Plan & Progress Report, conducted both in-person at the Asia Center for Air Pollution Research (ACAP) headquarters in Niigata, Japan, and online.

*Participants in Japan*

The Opening Session was moderated by Dr. Ken Yamashita, Head of the Planning and Training Department, and the Opening Remarks were delivered by Dr. Toshimasa Ohara, Director General of ACAP, Mr. Bert Fabian, Coordinator, Secretariat for the EANET, Prof. Xu Tang, Executive Director of IRDR International Center of Excellence on Risk Interconnectivity and Governance on Weather/Climate Extremes Impact and Public Health at Fudan University (FDU-IRDR ICoE-RIG-WECEIPHE), and Dr. FU Lu, the China Director of Clean Air Asia.

The speakers expressed their hopes that the fellows' research would contribute to creating cleaner air across East Asia and that this program would serve as a strong foundation for international collaborative research. Supervisors from the Network Center for the EANET (NC) and research fellows discussed their research studies intensively at the NC for 2 weeks. During the program, Dr. Hajime Akimoto, Emeritus Research Fellow of the National Institute for Environmental Studies (NIES) and Science Advisor of ACAP, delivered a lecture titled "Past and Present Challenges to Atmospheric Environmental Chemistry," sharing scientific insights related to the expansion of EANET's scope. Additionally, discussions were held with supervisors and researchers from ACAP about EANET's future development & fellows' contributions.

In China, the on-site session was organized by the IRDR ICoE-RIG-WECEIPHE and MAP-AQ Aisan Office Shanghai, Fudan University.

The fellows participated in the International Summer School Program on Climate Change and Related Risks held at Fudan University's Jiangwan campus and joined discussions, under the supervision of FDU. The program featured lectures by several internationally acclaimed scholars and leaders in their respective fields.

Additionally, the fellows visited the greenhouse gas lab and atmospheric chemistry lab of the Department of Atmospheric and Oceanic Sciences, FDU, the Shanghai Environmental Monitoring Center, and the relevant facilities related to air quality management. Fudan University also gifted souvenirs and cultural shirts with the logo of this year's training course to the fellows and organizers.

### Highlights of Fellows' Presentations

The session featured five fellows, each presenting their research projects, which covered a broad spectrum of atmospheric and environmental studies.

- Indonesia: The fellow, from the National Research and Innovation Agency (BRIN), presented his study on the impact of anabatic and katabatic winds on the dispersion and concentration of PM<sub>2.5</sub> in Bandung Basin, utilizing the WRF-Chem Model.
- Malaysia: The fellow, from the Malaysian Meteorological Department (MMD), focused on the long-term trends of acid deposition in Malaysia and the corresponding impacts of forest fires.
- Myanmar: The fellow, a Staff Officer at Myanmar's Department of Meteorology and Hydrology (DMH), provided an overview of air quality in Yangon, highlighting significant challenges and potential solutions.
- The Philippines: The fellow, from the Environmental Management Bureau (EMB), Department of Environment and Natural Resources, discussed her research on determining potential EANET monitoring sites based on sulfur dioxide emissions in the northern region – Northeastern Pangasinan.
- Russia: The fellow, from the Yu.A. Izrael Institute of Global Climate and Ecology (IGCE), shared her findings on acidifying compounds runoff discharge and its variations at the Pereemnaya River, Baikal Lake Region.



*Participants in China*

The event, moderated by Prof. Xu Tang, concluded with remarks from Prof. Meng Fan, the Deputy Director General, Asia Center for Air Pollution Research, from Mr. Bert Fabian, Coordinator, the Secretariat for the EANET, from Prof. Renhe Zhang, Former Vice President of Fudan University, and Dr. Wei Wan, China Program Director, Clean Air Asia. In their remarks, the speakers commended the fellows for their exceptional work and encouraged continued collaboration.

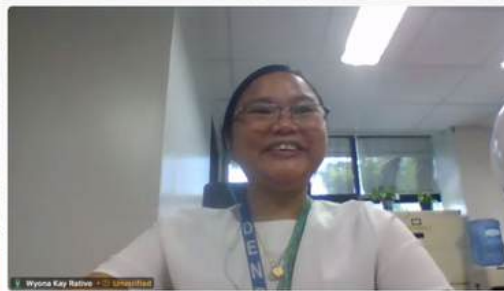
The session highlighted the significant strides made through the program in building leadership in air quality management in East Asia, setting a strong foundation for future initiatives.

The Closing Session concluded with Professor Renhe Zhang, Former Vice President of Fudan University, Dean, the Institute of Atmospheric Science (IAS), FDU Director, FDU/IRDR International Center of Excellence, and WMO/IGAC MAP-AQ Asian Office in Fudan University, presenting the completion certificates to the fellows on behalf of the program organizers.

The Fellowship for Building Leadership in Atmospheric Environment and Air Quality Management in East Asia program has been approved at the Twenty-fifth Session of the Intergovernmental Meeting (IG25) on the EANET, as a Project Activity, co-funded by the EANET Project Fund, Fudan University, and Clean Air Asia

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View the photos on [Flickr](#).



*The fellows with their completion certificates*



# The First Session of the Technical and Training Capacity Building Program in 2024



The Technical and Training (TNT) program of the National Institute of Environmental Research (NIER), Republic of Korea, and the EANET Capacity Building Program have been collaborating since 2023 to provide training on acid deposition and air quality management for the EANET Participating Countries.

The first session of the program was held in the Republic of Korea and Japan in April and May 2024, offering training to four government representatives from the EANET Participating Countries.

Since 2002, the EANET has trained over 200 government officials and researchers on acid deposition and air quality management through its individual training and capacity-building activities conducted mainly at the Asia Center for Air Pollution Research (ACAP) in Niigata, Japan, which hosts the Network Center for the EANET.

The National Institute of Environmental Research (NIER), part of the Ministry of Environment in the Republic of Korea, was established in 1978. It serves as the country's primary research institution for various environmental aspects. NIER is based in Incheon and operates 12 air quality monitoring stations and 4 river research centers. The institute conducts extensive research and policy development on environmental health, climate, air quality, water resources, and energy, and collaborates on international projects aimed at global environmental protection.

In 2024, the program was structured into two sessions, each comprising two parts, alternating between the Republic of Korea and Japan. The first session started in the Republic of Korea from April 28 to May 11, 2024, followed by Japan from May 11 to May 18, 2024. Four government officials and researchers from four EANET Participating Countries were selected to participate in this training, based on their professional backgrounds, technical expertise in monitoring activities, and motivation.



From late April to early May, in the Republic of Korea, participants first underwent comprehensive training at the National Institute of Environmental Research (NIER) in Incheon, where lecturers presented their primary responsibilities, ongoing projects, and the specialized tools and instruments utilized in their divisions.

Additionally, the trainees visited the Atmospheric Environment and Climate Change Laboratory at [Seoul National University](#) (SNU) and [Ulsan National Institute of Science and Technology](#) (UNIST). During their visit to SNU, they learned about filtering and sampling, filter extraction and mass concentration measurement, and analysis of microelements (XRF, OC/EC). In the laboratory hands-on section, they gained practical experience in conducting analyses. At UNIST, lectures on international research collaboration on air quality, research instruments and tools for analyzing air quality, and method validation of satellite monitoring were delivered. The trainees also explored [NIER's Jeju monitoring station](#) and the National Air Emission Inventory and Research Center (NAIR) under the Ministry of Environment of the Republic of Korea. At these locations, they learned about the Republic of Korea's policies and strategies for managing air pollution, extensive monitoring, analysis, and forecasting of air pollutant sources.

During the second week of May, in Japan, participants visited the [National Institute for Environmental Studies](#) (NIES) in Tsukuba City, where they received briefings and lab tours in the Climate Change Research Hall. The trainees were also introduced to the atmospheric chamber and lidar system. They received lectures on the Earth System Division (ESD), and observations of NO<sub>2</sub> and greenhouse gases (GHG) using stationary and mobile networks.

While at the Asia Center for Air Pollution Research (ACAP) in Niigata, EANET's Network Centre, participants attended lectures covering a wide array of atmospheric environmental issues, including the ecological impacts of atmospheric deposition and air pollution in Europe, the USA, and Asia.

The training also covered methods for monitoring soil, vegetation, inland aquatic environments, and catchment areas. Furthermore, participants learned about quality assurance and quality control (QA/QC) activities in EANET, data reporting procedures, the Inter-laboratory Comparison Project, the analysis of EANET monitoring data (including from the [Periodic Report on the State of Acid Deposition in East Asia](#) (PRSAD)), and an introduction to emission inventories and air quality modeling. They also received an introduction to Air Quality Monitoring Systems Using Low-Cost Sensors (LCS). Finally, participants visited the EANET [Niigata-Maki monitoring site](#). During this visit, participants had the opportunity to observe wet-only samplers (both weekly and daily), the filter pack system, automatic monitors for SO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>2.5</sub> components, as well as meteorology monitors. This visit provided participants with hands-on practice using field equipment for air quality monitoring.

The training's feedback survey indicated that all participants found the program in the Republic of Korea and Japan to be highly valuable. It is anticipated that the experience and knowledge gained will be disseminated to colleagues in their respective countries through seminars, lectures, or study meetings, further enhancing expertise in air quality management in the EANET Participating Countries.

The second session of the Technical and Training Capacity Building Program will be held in Japan and the Republic of Korea in September and October 2024.

The TNT and EANET Capacity Building Program in 2024 was approved at the [Twenty-fifth Session of the Intergovernmental Meeting on the EANET](#) (IG25) in November 2023 as a [Project Activity](#), co-funded by the EANET Project Fund and the Republic of Korea. Find out more about the [EANET Project Fund](#).

View more photos of the TNT Capacity Building program session 1 on [Flickr](#).

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# Indonesia Hosts Pivotal Air Quality Events Showcasing Collaborative Solutions and Regional Action



In the first week of September 2024, Indonesia hosted a series of key air quality events showcasing collaborative solutions and regional action. These included the workshop “Advancing Science-Based Local Actions to Combat Air Pollution in Greater Jakarta” (Sept 2-3) by [Viriya ENB](#) and [Clean Air Asia](#), the “Southeast Asia Climate Philanthropy Forum” (Sept 4) organized by hosted by [Bloomberg Philanthropies](#) in collaboration with Coordinating Ministry of Maritime and Investment ([CMMI](#)), and the “Indonesia International Sustainability Forum (ISF)” (Sept 5-6), led by the CMMI.

The workshop Advancing Science-Based Local Actions to Combat Air Pollution in Greater Jakarta discussed the city’s worsening air quality and actions to address this issue. Opening remarks by Dr. Suzanty Sitorus ([Viriya ENB](#)), Mrs. Velly Asvaliantina ([CMMI](#)), and Ms. Catherine Witherspoon ([ClimateWorks](#)) emphasized the importance of science in tackling pollution.

Information on air pollution sources shared by CMMI revealed that vehicles contribute 42%-57% of pollutants during the dry season and 32%-41% during the rainy season, with coal-fired plants, construction activities, and open waste burning also contributing significantly. Discussions included efforts to reduce pollution, such as shifting to renewable energy, and challenges such as upgrading fuel quality to Euro4 standards were also highlighted. Experts from Thailand (Thailand Pollution Control Department – [PCD](#)), China (Beijing Transport Institute, Center for Science and Environment – [CSE](#)) and Indonesia (Jakarta Transportation Management Body – [Badan Pengelola Transportasi Jabodetabek/BPJT](#) – and Institute for Transportation and Development Policy – [ITDP](#)) called for stricter emission standards, better fuel quality, and the promotion of electric vehicles.



On the second day, experts from EANET, Peking University, China, the National Research and Innovation Agency (Badan Riset dan Inovasi/ BRIN), the Institute for Global Environment Strategies (IGES), the Clean Air Fund (CAF), and the Imperial College of London, stressed the need for collaboration between scientists and policymakers for tailored solutions, as pollutant compositions vary between cities. Mr. Bert Fabian, Coordinator of the Secretariat for the EANET, emphasized the need to bridge the gap between scientific research and policy implementation to create effective and locally appropriate air quality strategies. He highlighted the role of EANET in scientific cooperation among countries in East Asia including Indonesia, and its new mandate to work on air pollution.

On September 4, the Southeast Asia Climate Philanthropy Forum convened, marking a milestone as the first forum of its kind in the region. The event provided an inclusive platform to accelerate people-centered climate solutions. A key breakout session focused on air pollution and inclusivity, featuring panelists from C40 Cities, UNICEF Indonesia, DILANS (The Movement of Persons with Disabilities and the Elderly in Indonesia), and PT Transportasi Jakarta (the city's public transport operator).

The session stressed the need to involve vulnerable and marginalized communities in efforts to tackle air pollution and ensure access to clean air. According to PT Transportasi Jakarta, although public transportation covers 98% of Jakarta, only 13 bus-stops currently offer accessibility for disabled individuals.

The Indonesia International Sustainability Forum, held on September 5–6, was inaugurated by Indonesian President Joko Widodo, who reiterated the nation's commitment to addressing climate change, energy transition, and sustainability goals. Indonesia reaffirmed its pledge to achieve net-zero emissions in the face of the growing climate crisis.

During Plenary 5, "Pioneering Solutions for Urban Air Pollution," speakers, including Ms. Dechen Tsering, UNEP's Executive Director for the Regional Office for Asia and the Pacific; Mr. Rui Luo, Director of Global Energy Transition at Bloomberg Philanthropies; Ms. Liang Wenyue, Director General of Beijing's Municipal Ecology and Environment Bureau; and Mr. Iyad Kheirbek, Director of Air Quality at C40, shared insights into addressing urban air pollution in some of the most polluted cities in Asia Pacific. The session highlighted the importance of regional cooperation to tackle the transboundary nature of air pollution. UNEP, which hosts the EANET Secretariat, also emphasized the role of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)'s Regional Action Programme on Air Pollution (RAPAP) in fostering greater regional collaboration.

These events underscored the urgent need for collaborative science-based solutions to combat air pollution across Southeast Asia, emphasizing cross-sector collaboration—from science to policy—and ensuring inclusivity in finding sustainable solutions.

*Photo credits: cover photo: the fifth plenary discussion at the Indonesian International Sustainability Forum (ISF) 2024 at Jakarta Convention Center (JCC) Senayan, Jakarta, on 5/9/2024. ©ANTARA FOTO/Novrian Arbi/Spt. From left to right: Mr. Iyad Kheirbek, Director of Air Quality, C40; Mr. Rachmat Kaimuddin, Deputy, CMMI; Ms. Liang Wenyue, Director General, Beijing Municipal Ecology and Environment Bureau; Ms. Dechen Tsering, Regional Director UNEP; Mr. Rui Luo, Director of Global Energy Transition, Bloomberg Philanthropies.*

# 2025 Calendar of Events



## AUGUST

Date TBC

The Twenty-sixth Senior  
Technical Managers' Meeting  
(STM26) on the EANET

Date TBC

The Working Group Meeting  
(WG2025) on the EANET in  
2025

## OCTOBER

Date TBC

The Twenty-fifth Scientific  
Advisory Committee (SAC25)  
meeting on the EANET

## NOVEMBER

Date TBC

The Twenty-seventh Session of  
the Intergovernmental Meeting  
(IG27) on the EANET

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