

Report of activities of the Task Force On Monitoring And Assessment Of Atmospheric Environment (TFAE)

SAC26

20-22 October 2026

Kuala Lumpur, Malaysia

Chair of the Task Force

Secretariat of the Task Force

Background

- **The Task Force on Monitoring and Assessment of Atmospheric Environment (TFAE) was established in 2023 by reforming the previous Task Forces.**
- **TFAE will assist the SAC, IG, and NC the activities related with the atmospheric monitoring and QA/QC, for example, developing and improving the atmospheric monitoring methods, reviewing the research activities, and providing the recommendation on the future research direction regarding atmospheric monitoring and evaluation in the scope of EANET.**

Terms of References (TOR) of TFAE

- i. To develop and improve the atmospheric monitoring methods and QA/QC of atmospheric monitoring in the scope of EANET
- ii. To elaborate the appropriate atmospheric EANET monitoring sites data evaluation methods (atmospheric deposition estimation, trend analysis, etc.) in the scope of EANET
- iii. To promote and review research activities on analysis and evaluation of atmospheric monitoring data of EANET sites, monitoring instrumentation and monitoring methodologies in the EANET
- iv. To provide recommendation on the future research direction of the EANET regarding atmospheric monitoring and evaluation in the scope of EANET

Membership of the Task Force on AE

Basically, one member from each EANET participating country has been nominated as the Task Force member.

(Chair)	Prof. Taehyoung Lee, Republic of Korea
(Vice-Chair)	Dr. Nguyen Van Hong, Vietnam
(Members)	Mr. Him Chandath, Cambodia
	Dr. Jingyu Tian, China
	Prof. Puji Lestari, Indonesia
	Prof. Kazuhide Matsuda, Japan
	Mr. Sitthideth Nonthaxay, Lao P.D.R
	Dr. Ahmad Fairudz bin Jamaluddin, Malaysia
	Ms. Bold Altantuya, Mongolia
	Ms. Wai Lwin Than, Myanmar
	Prof. Mylene G. Cayetano, Philippines
	Dr. Tamara Khodzher, Russia
	Dr. Sarawut Thepanondh, Thailand

Major activities in 2025-2026

- The 3rd, 4th and 5th online meetings of TFAE were held in 2025-2026.
- The draft of “Strategy Paper on the Future Direction of Monitoring and Data Evaluation for Air Pollutants and Atmospheric Deposition in East Asia (2027-2032)” has been developed.
- Activities of the following EANET projects were reviewed.
 - Promoting VOCs-related Capacity Building in the EANET
 - Methodology Study for Development of LCS Hybrid Air Quality Monitoring Network (HAQMN)
 - Methodological Study on PM_{2.5} Source Identification and Capacity Enhancement in EANET with Emphasis on Southeast Asia

3rd TFAE meeting (30 October 2025)

- Reviewed **the draft EANET Medium-Term Plan (MTP) 2026-2030.**
- Agreed on **the overall direction of the Strategy Paper (2027-2031)** and identified key themes, including network sustainability, dry deposition assessment, QA/QC enhancement, data management, capacity building, and climate change integration.
- Confirmed capacity building as a core activity of EANET and **emphasized the need to strengthen technical expertise and monitoring capabilities among participating countries.**
- Reviewed progress in the VOC Monitoring Capacity Development Project and Hybrid Air Quality Monitoring Network (HAQMN) Project

The Agenda and Minutes of the 3rd meeting is attached in Annex 1.

4th TFAE meeting (30 June 2026)

- Reviewed the first draft of the Strategy Paper 2027-2031 and agreed **the strengthening of a harmonized regional atmospheric monitoring system as a key strategic objective.**
- Confirmed the importance of **improving methodologies for dry deposition estimation, data evaluation, QA/QC procedures, and calibration techniques** to enhance data comparability across countries.
- Discussed the **future application of satellite observations and low-cost sensors** and recognized the need for further evaluation before broader implementation.
- Reviewed progress in the VOC Monitoring Capacity Development Project and PM_{2.5} Source Apportionment Project.
- Reported **the Alternative Filter Pack Intercomparison Study.**

The Agenda and Minutes of the 4th meeting is attached in Annex 2.

5th TFAE meeting (28 August 2026)

- Reviewed the revised draft of the **Strategy Paper 2027-2031** and **confirmed its role as a medium-term strategic framework**.
- Identified **PM_{2.5}, O₃, NO_x, and NH₃** as **priority pollutants** requiring strengthened monitoring and assessment efforts.
- Emphasized **enhanced utilization of monitoring data through long-term trend analysis, regional comparisons, and seasonal and diurnal variability assessments** to improve understanding of atmospheric processes.
- Agreed on the schedule and process for **finalizing the Strategy Paper for submission to SAC26**.

The Agenda and Minutes of the 5th meeting is attached in Annex 3.

Contents of the Strategy Paper

“Strategy Paper on the Future Direction of Monitoring and Data Evaluation for Air Pollutants and Atmospheric Deposition in East Asia (2027-2032)”

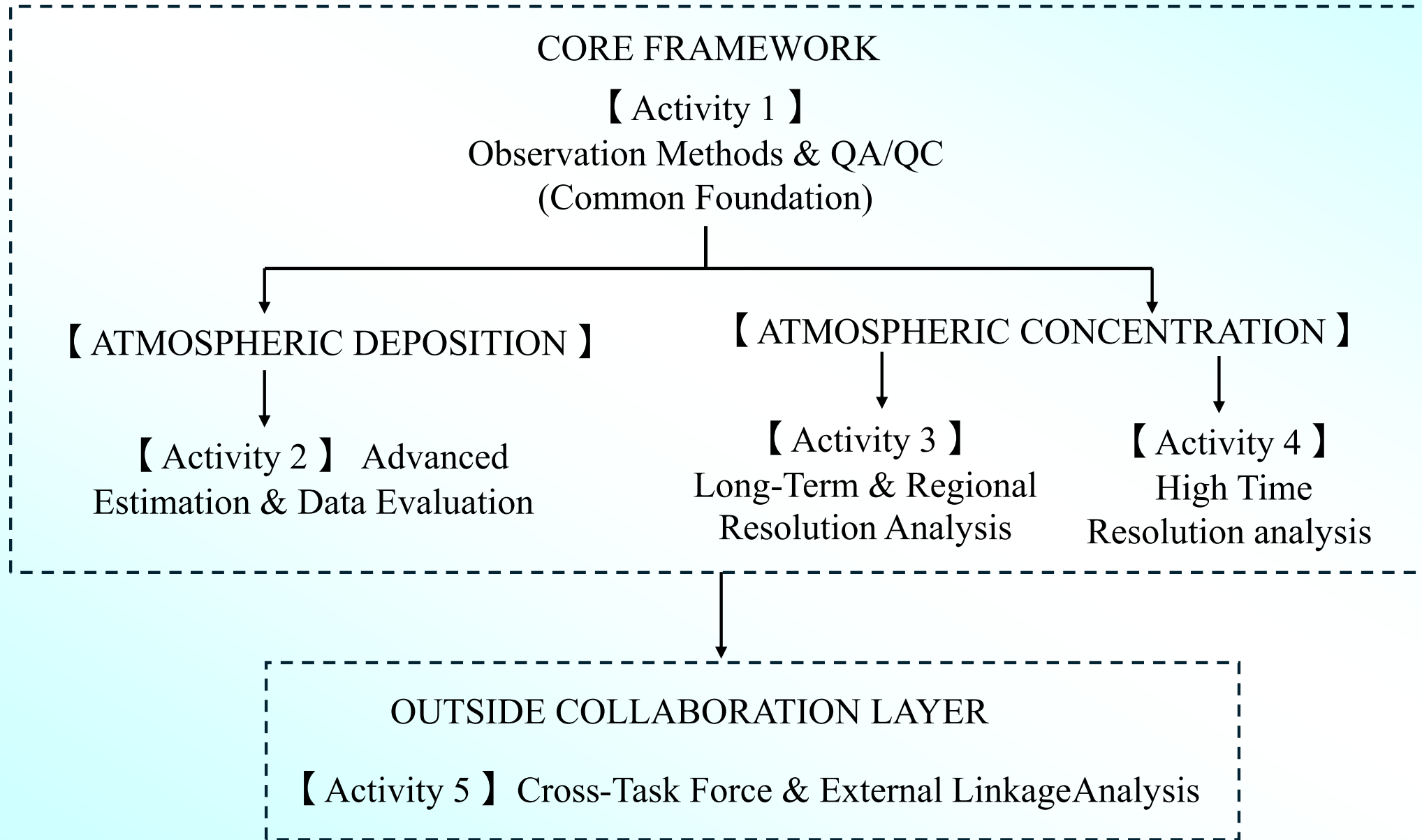
- I. Introduction
- II. Current status
- III. Objectives
- IV. Activities to be implemented to achieve the objectives from 2027 to 2032
- V. Capacity building of atmospheric monitoring activities
- VI. Collaboration with relevant networks/organizations

The final draft of the Strategy Paper is attached in Annex 4.

Chapter III. Objectives of the Strategy Paper

- I. **Strengthen and harmonize monitoring systems** for air pollutants and atmospheric deposition across the EANET region through expanded monitoring coverage, integration of satellite-based information, broader monitoring parameters, and enhanced QA/QC frameworks.
- II. **Advance data evaluation methodologies and integrated analysis** by improving atmospheric deposition estimation, long-term trend assessment, and the integration of monitoring data with research analyses to improve understanding of atmospheric processes.
- III. **Enhance policy support and regional cooperation** through greater accessibility and utilization of monitoring and assessment results, strengthened science-policy interfaces, capacity building, information exchange, and collaboration involving both observation and modeling communities.

Chapter IV. Conceptual framework illustrates the interrelationships among the five activities of the Task Force



Chapter IV. Activities to be implemented to achieve the objectives from 2027 to 2032

i) Integrated Enhancement of Atmospheric Observation Methods and QA/QC

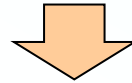
- ☐ Review and update Technical Manuals for priority pollutants (PM_{2.5} components, O₃, NO_x, and NH₃)
- ☐ Harmonize monitoring methodologies, calibration procedures, and data reporting formats
- ☐ Strengthen QA/QC systems and ozone calibration practices
- ☐ Evaluate the applicability of satellite observations, model data, and low-cost sensors
- ☐ Review future priorities for PM_{2.5} chemical component monitoring

ii) Advanced Estimation and Data Evaluation Methods for Atmospheric Deposition in EANET

- ☐ Integrating atmospheric pollutant and meteorological observations
- ☐ Assessing the use of reanalysis and model-derived meteorological datasets
- ☐ Improving inferential methods for deposition estimation, particularly for reactive nitrogen species
- ☐ Reviewing deposition velocity parameterizations and simplified estimation approaches
- ☐ Updating technical guidelines for dry deposition flux estimation

iii) Review and Update of Methods for Long-Term Trend Analysis and Regional Comparison Using EANET Data

iv) Promotion of Atmospheric Process Understanding Using High-Time-Resolution Data



These activities serve as core scientific contributions to the upcoming EANET Periodic Report covering the period from 2025 to 2029.

v) Strengthening Collaborative Research through Coordination with Other Task Forces

- ☐ Evaluating nitrogen deposition and its impacts on ecosystems
- ☐ Assessing health impacts associated with O₃ and PM_{2.5} exposure
- ☐ Conducting joint research among EANET task forces
- ☐ Disseminating scientific findings through workshops, projects, and capacity-building activities

Chapter V. Capacity building of atmospheric monitoring activities

- **Strengthen capacity building in atmospheric monitoring** through on-site training courses, workshops, and seminars for monitoring and QA/QC personnel, while leveraging training opportunities provided by international organizations such as WMO/GAW, APCAP, and JICA.
- **Enhance regional scientific cooperation through an expert network** by maintaining and expanding a roster of atmospheric monitoring and assessment experts to facilitate the exchange of technical knowledge, best practices, research findings, and emerging monitoring methodologies among EANET participating countries.

Chapter VI. Collaboration with relevant networks/organizations

- **Promote regional and international collaboration** to strengthen monitoring and assessment capacities through scientific and technical exchanges, integrated use of monitoring data, modeling, emission inventories and satellite observations, and joint research and capacity-building activities.
- **Strengthen partnerships with global and regional networks** such as EMEP, WMO/GAW, CASTNET, and NADP to support methodology and data exchange, joint assessments, scientific collaboration, ecosystem impact studies, and sustainable nitrogen management.

Action required

The Twenty-sixth Session of the Scientific Advisory Committee (SAC26) is invited to review the report on the activities of the TFAE and consider for **adoption of the Strategy Paper on the Future Direction of Monitoring and Data Evaluation for Air Pollutants and Atmospheric Deposition in East Asia (2027–2031)**.