

The Twenty-sixth Session of the Scientific Advisory Committee (SAC26)
on the Acid Deposition Monitoring Network in East Asia
20-22 October 2026, Kuala Lumpur, Malaysia

**Consideration of the Relevant Scientific Activities of the EANET:
Methodological Study on PM_{2.5} Source Identification and Capacity Enhancement
in EANET with Emphasis on Southeast Asia
(Project Activities 6 in 2026)**

I. Joint workshop on Air Pollution Policy Based on PM_{2.5} Source Information - Toward Policy Application and Capacity Building in East Asia -

I.1. Background

1. PM_{2.5} pollution remains a critical environmental and public health challenge in East Asia due to its complex origins, including biomass burning, urban transportation emissions, and secondary aerosol formation. The high PM_{2.5} concentrations have significant health impacts and contribute to transboundary air pollution, making regional cooperation essential. While many East Asian countries have made progress in establishing PM_{2.5} mass concentration monitoring networks, capacities related to PM_{2.5} chemical component analysis, PM_{2.5} source apportionment, and the effective use of PM_{2.5} source information for policy development remain limited. Moreover, insufficient technical expertise, human resources, and consistent data availability continue to hinder evidence-based air quality management.
2. The workshop will provide opportunities to share experiences and lessons learned from the ongoing SATREPS project (Air-SATREPS), as well as other PM_{2.5} source apportionment studies conducted in the East Asian region. Through the knowledge and experience exchange, the workshop seeks to enhance synergy and mutual complementarity between Air-SATREPS activities and EANET initiatives.

I.2. Purposes

3. The objectives of the workshop are to:
 - Review the current status, challenges, and needs related to PM_{2.5} chemical composition measurement and PM_{2.5} source apportionment in East Asian countries;
 - Discuss PM_{2.5} analysis approaches that are feasible under limited financial and human resource, including the use of low-cost sensors (LCS) and simplified analytical techniques;
 - Share perspectives on capacity building, methodological standardization, and pathways for policy application of PM_{2.5} source apportionment, based on experiences from SATREPS and other related research projects.

I.3. Agenda

4. The agenda of the workshop is shown below.

June 12, 2026

Time/Duration	Agenda
13:00-13:10	Opening Remarks, Introduction ● Ms. Siwaporn Rungsiyanon (Asia Center for Air Pollution Research (ACAP)) ● Mr. Ke Vongwatana (Ministry of Environment, Cambodia) ● Dr. Mitsuhiro Hata (Air SATREPS Project) Introducing the objectives of WS, and the linkage with the EANET Project and Air-SATREPS ● Dr. Keiichi Sato (ACAP)
13:10-14:10	Session 1 Current Status of PM_{2.5} Monitoring and Source Apportionment in East Asia Overview of national practices in East Asian countries, including: • PM_{2.5} monitoring frameworks • Chemical speciation and source apportionment activities • Technical and institutional challenges Presenters: ● Prof. Yongjoo Choi, Hankuk University of Foreign Studies, Republic of Korea ● Prof. Puji Lestari, Bandung Institute of Technology, Indonesia ● Prof. Mylene G. Cayetano, University of the Philippines in Diliman, Philippines Moderator: Dr. Keiichi Sato (ACAP)
14:10-14:15	Break
14:15-15:00	Session 2 Case Study and Panel Discussion Case Study: Phnom Penh (Air-SATREPS) • Practical examples of PM_{2.5} chemical composition measurement and analysis in Cambodia • Policy applications using PM_{2.5} source information with a phased and scalable approach • Lessons learned from capacity building and institutional development Presenter: ● Dr. Moly Or Chanmoly (Air-SATREPS Project) Interactive Online Polling • Q1: What is the highest-priority PM_{2.5} source in your country? • Q2: What data, human resources, and institutions are currently available? • Q3: What are the main barriers to effective PM_{2.5} pollution control? Panel Discussion: Based on the results of the online poll and country-specific situations, the panelists will discuss effective measures for controlling PM_{2.5} pollution.. Panelists: ● Speakers from Session 1 ● ☐ Dr. Moly Or Chanmoly, Air-SATREPS Project ● Mr. Yim Raksmeay, Ministry of Environment, Cambodia Moderator: Dr. Keiichi Sato (ACAP)

15:00-15:10	General QA, Summary of the workshop
15:10-15:15	Closing

I.4. Highlights of the workshop

5. In the Session 1, presentations on researches in Thailand, the Republic of Korea, Indonesia, and the Philippines demonstrated diverse approaches to PM_{2.5} analysis including the below contents. These presentations highlighted both the progress made and the ongoing challenges in the region.
 - Integrated use of satellite data, ground observations, and modeling to understand pollution sources
 - Expansion of national monitoring networks despite technical and financial constraints
 - Application of tools such as Positive Matrix Factorization (PMF) to support policymaking
6. In the Session 2, the panelists discussed effective measures for controlling PM_{2.5} pollution based on the results of the online poll and country-specific situations. Summary of the panel discussions is shown below.
 - Collecting dense monitoring data is the first step. Combining in-situ measurement and satellite data is important. Reduce from large emission source is achieved in Korea.
 - Compare the sources in different cities and countries. Indonesia government is collecting the information on sources. Not only monitoring data, cost effectiveness is an important option for the political action.
 - Open burning and agricultural residues are traditional culture in southeast Asian countries. Prioritized intervention is biomass burning.
 - Cooperation with other institutions are important for overcome the barriers to PM_{2.5} pollution measures.
 - Collect scientific evidence is important. Introducing EV is feasible for reducing of transport sector in Cambodia. Open burning is traditional activity, and it is difficult to reduce.
 - Regarding PM_{2.5} source, high priority is transportation source in Phnom Penh and open burning in rural. Household sources are also important and transboundary pollution are also in rural.

II. Hands on Training and Technical Exchange in Cambodia

7. As we as the joint workshop, hands on training and technical exchange were conducted for the staffs of the Ministry of Environment of Cambodia and Institute of Technology of Cambodia. The training session covered wet and dry deposition monitoring, filter pack sampling techniques, ion chromatography (IC) analysis, etc, combining lectures, laboratory exercises, and group discussions.. Practice in sample extraction and IC measurement allowed participants to improve technical skills and better understand analytical procedures. Discussions focused on practical improvements, including optimization of extraction methods, ensuring calibration accuracy, and strengthening quality assurance and quality control (QA/QC). The exchange between Cambodian and Japanese experts provided opportunities to compare methodologies and identify areas for

improvement, contributing to enhanced laboratory practices and data reliability.

III. Development of technical documents for PM2.5 component measurement and source apportionment

III.1. Draft content of technical document for PM2.5 component measurement

8. To support capacity enhancement on PM2.5 monitoring in the EANET region, a technical document on PM2.5 component measurement will be developed. The document aims to provide practical guidance on sampling, chemical analysis, quality assurance/quality control (QA/QC), and data management for PM2.5 component measurements. It is intended to support countries that are planning to establish or strengthen PM2.5 chemical composition monitoring activities under existing technical and financial resources. The document will be prepared by taking into account existing international guidelines and experiences gained through EANET project activities. The proposed contents of the technical document are as follows:

- i. Introduction
- ii. Principles of PM2.5 Component Measurement
- iii. PM2.5 Sample Collection
- iv. Measurement of Ionic Components
- v. Measurement of Elemental Components
- vi. Measurement of Carbonaceous Components
- vii. Measurement of Organic Tracers
- viii. Supporting Measurements
- ix. Data Quality Management
- x. Data Management and Reporting

III.2. Draft content of technical document for PM2.5 source apportionment

9. A technical document on PM2.5 source apportionment will also be developed to support the interpretation and utilization of PM2.5 chemical composition data for scientific assessment and air quality management. The document will summarize methodological approaches for source identification, including receptor modeling techniques such as Positive Matrix Factorization (PMF), the use of chemical tracers, and integration with meteorological and other supporting information. Particular attention will be given to methodologies that can be practically applied in East Asian countries and contribute to evidence-based policymaking. Experiences and lessons learned from the EANET project and other studies conducted in the region will be incorporated where appropriate. The proposed contents of the technical document are as follows:

- i. Introduction
- ii. Fundamentals of PM2.5 Sources

- iii. Data Requirements
- iv. Source Identification Using Chemical Indicators
- v. Receptor Modeling Approaches
- vi. PMF Analysis Procedure
- vii. Integration with Other Approaches
- viii. Interpretation of Source Apportionment Results
- ix. Application to Air Quality Management

IV. Actions required at SAC26

10. SAC26 is invited to review the progress of methodological study on PM_{2.5} source identification and capacity enhancement in EANET with emphasis on Southeast Asia (EANET Project Activities 6 in 2026).