

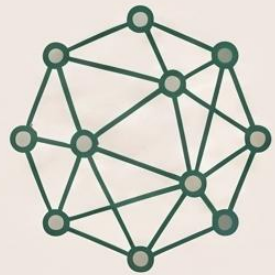


Transforming Atmospheric Data into Regional Policy

A 28-year legacy of atmospheric
monitoring and management in Asia.

Siwaporn RUNGSIYANON, Deputy Director General

ACAP: for Asian Atmospheric Management



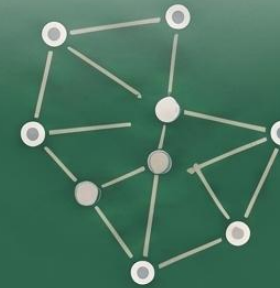
ORGANIZATIONAL FOUNDATION

- **Established in 1998:** Over two decades of dedicated atmospheric quality management across the Asian region.
- **Led by the Ministry of the Environment, Japan (MOEJ):** Operates as a primary leadership body for regional environmental strategy and oversight.



Established in 1998, ACAP is a long-standing organization led by the Ministry of the Environment, Japan (MOEJ). It serves as a regional hub dedicated to improving atmospheric quality through deep-rooted institutional partnerships and multi-sector synergy.

THE THREE STRATEGIC PILLARS



1. Strong Regional Foundation: Partnerships with NIES, Niigata University, and IGES to develop environmental strategies.



2. Multi-Sector Collaboration: Sustained by active support from Niigata Prefecture and the City of Niigata.



3. Academic & Research Synergy: Driving innovation through engagement with manufacturing companies and non-profit organisations.

Driving Seamless Regional Atmospheric Protection



Open Data

Producing high-quality open data for accurate regional baselines, giving stakeholders reliable scientific foundations.



Knowledge-Sharing

Providing seamless knowledge-sharing across borders to coordinate regional monitoring and research efforts.



Capacity-Building

Delivering targeted capacity-building and specialized training to strengthen operational and technical abilities.



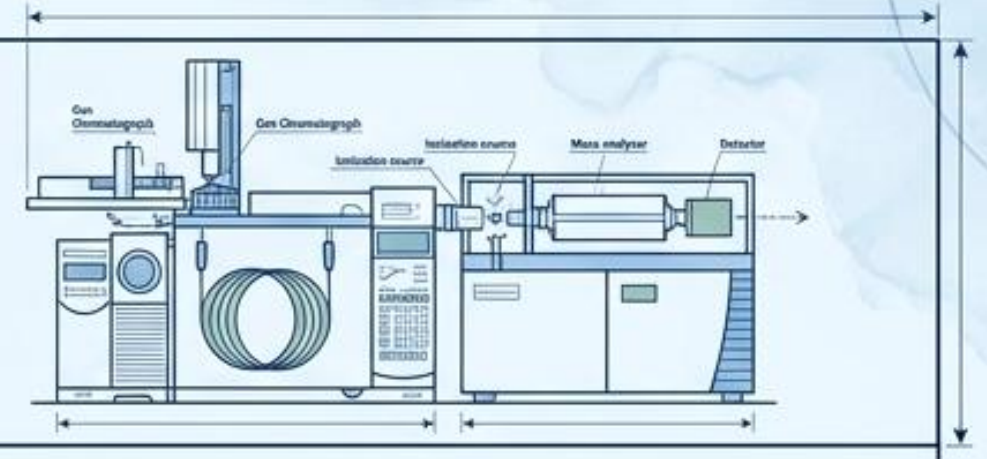
Public Awareness

Driving widespread public awareness of critical atmospheric threats and engaging with broader society.

State-of-the-Art Infrastructure for Atmospheric Analysis

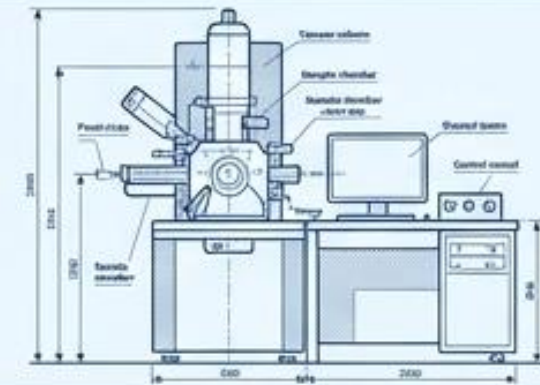
Advanced Chemical Analysis

Featuring Gas Chromatograph Mass Spectrometers and Ion Chromatographs for highly precise atmospheric compound breakdown.



Microscopic Investigation

Featuring dedicated Scanning Electron Microscopes designed for granular particulate examination and structural identification.



Dedicated Research Branches

Housing specialised, continuous-operation laboratories focused exclusively on long-term Atmospheric Research, International Training, and Wet Deposition analysis.



Forward-looking Stakeholder Network

Strengthens cooperation to address regional atmospheric challenges



“Bridging Science and Policy, Building Trust, Enhancing Partnership”

Bridging National and Regional Networks

EANET National Center of Japan

Coordinating domestic Japanese monitoring efforts and national scientific contributions.



Network Center for the EANET

Serving as the core data and scientific hub for the entire East Asian regional network.

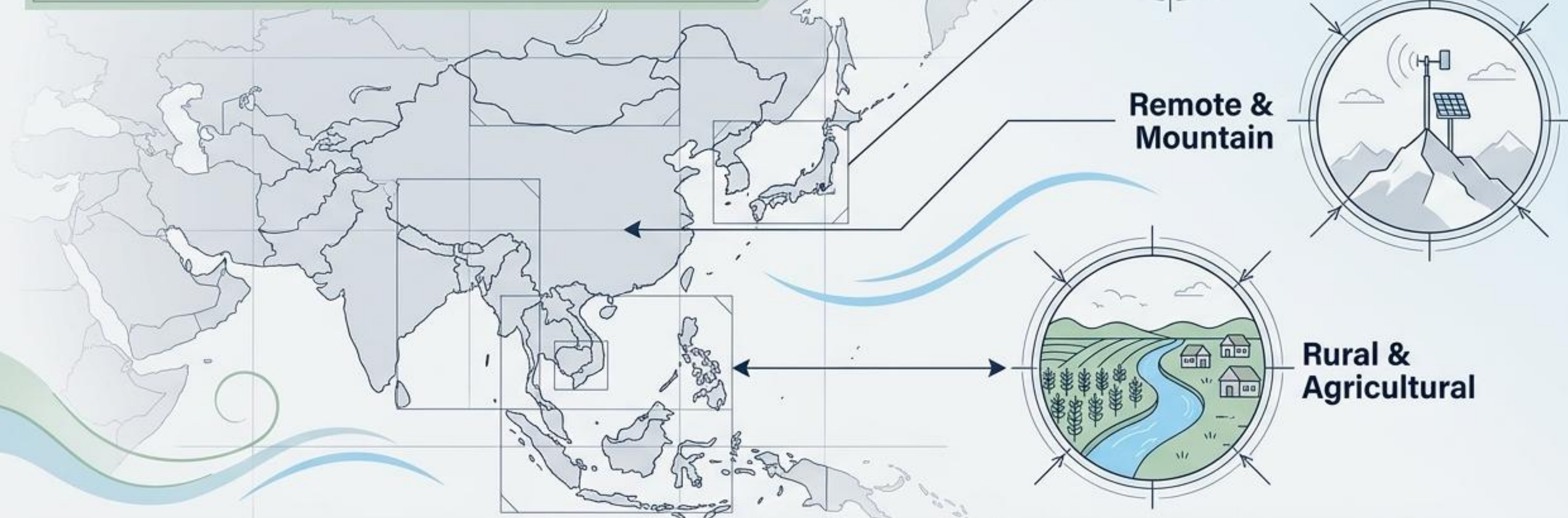
The EANET Network Center



Bridging Science, Policy, and Nations

Standardised Data Collection Across Diverse Asian Climates

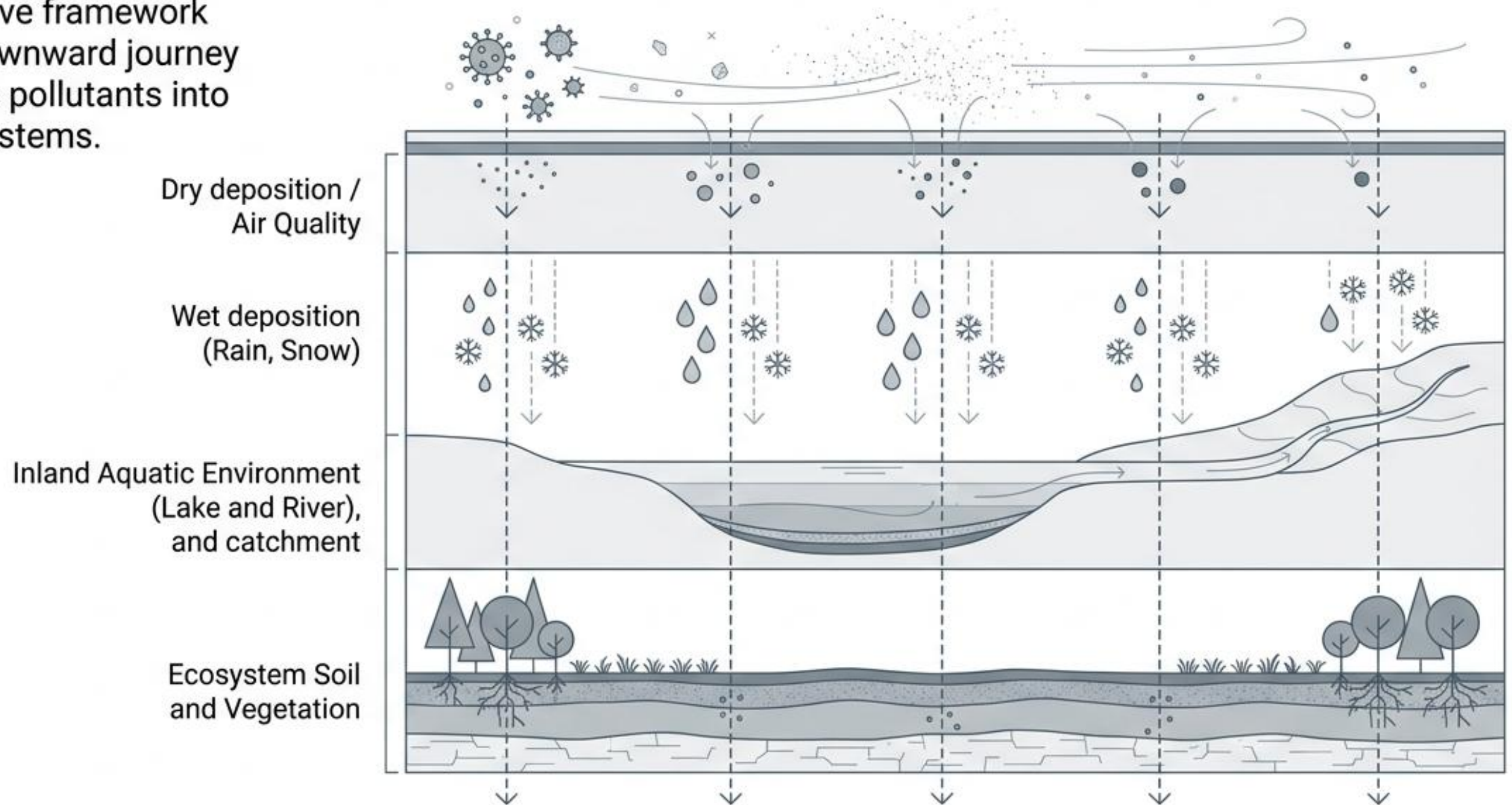
This vast pan-Asian network guarantees scientifically rigorous, cross-border data continuity regardless of extreme local climate variations.



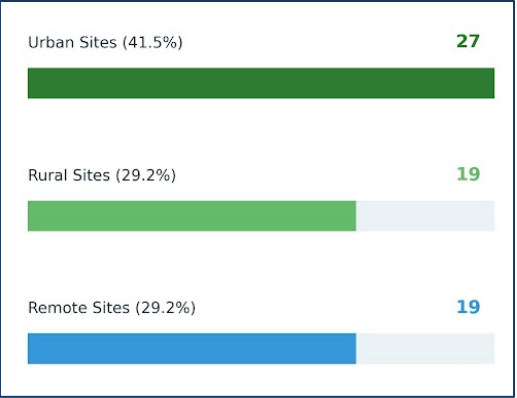
Cambodia | China | Indonesia | Japan | Lao PDR | Malaysia | Mongolia | Myanmar | Philippines | R. of Korea | Russia | Thailand | Vietnam

The EANET Monitoring Architecture

A comprehensive framework tracking the downward journey of atmospheric pollutants into complex ecosystems.



Monitoring Sites in 2025 (65 sites)



Ambient Atmospheric Diagnostics

Pollutant	Overall Trend
Ambient SO ₂ / SO ₄ ²⁻	Improved
Ambient NO _x (NO ₂)	Still at High Levels
Ambient O ₃	High & Increasing
PM ₁₀ and PM _{2.5}	Diverging

SEA*

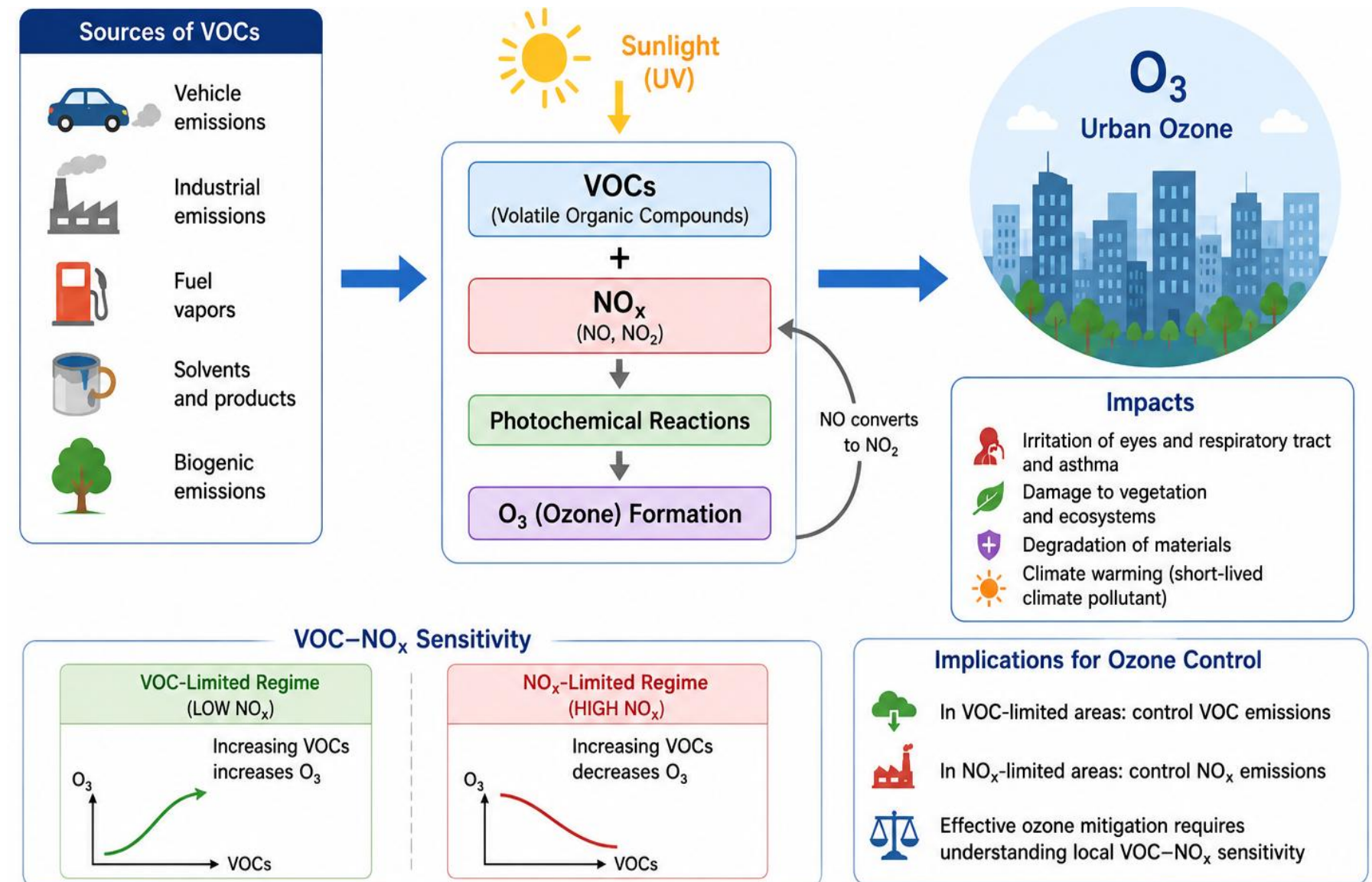
Tackling Ground-Level Ozone Demands Precursor Control (VOCs, NO_x)

Ozone problem is becoming increasingly serious

- Many countries are strengthening ozone-related air quality standards
- Ozone concentrations remain elevated in many parts of East Asia
- Ozone pollution is also closely linked meteorological conditions and heat waves

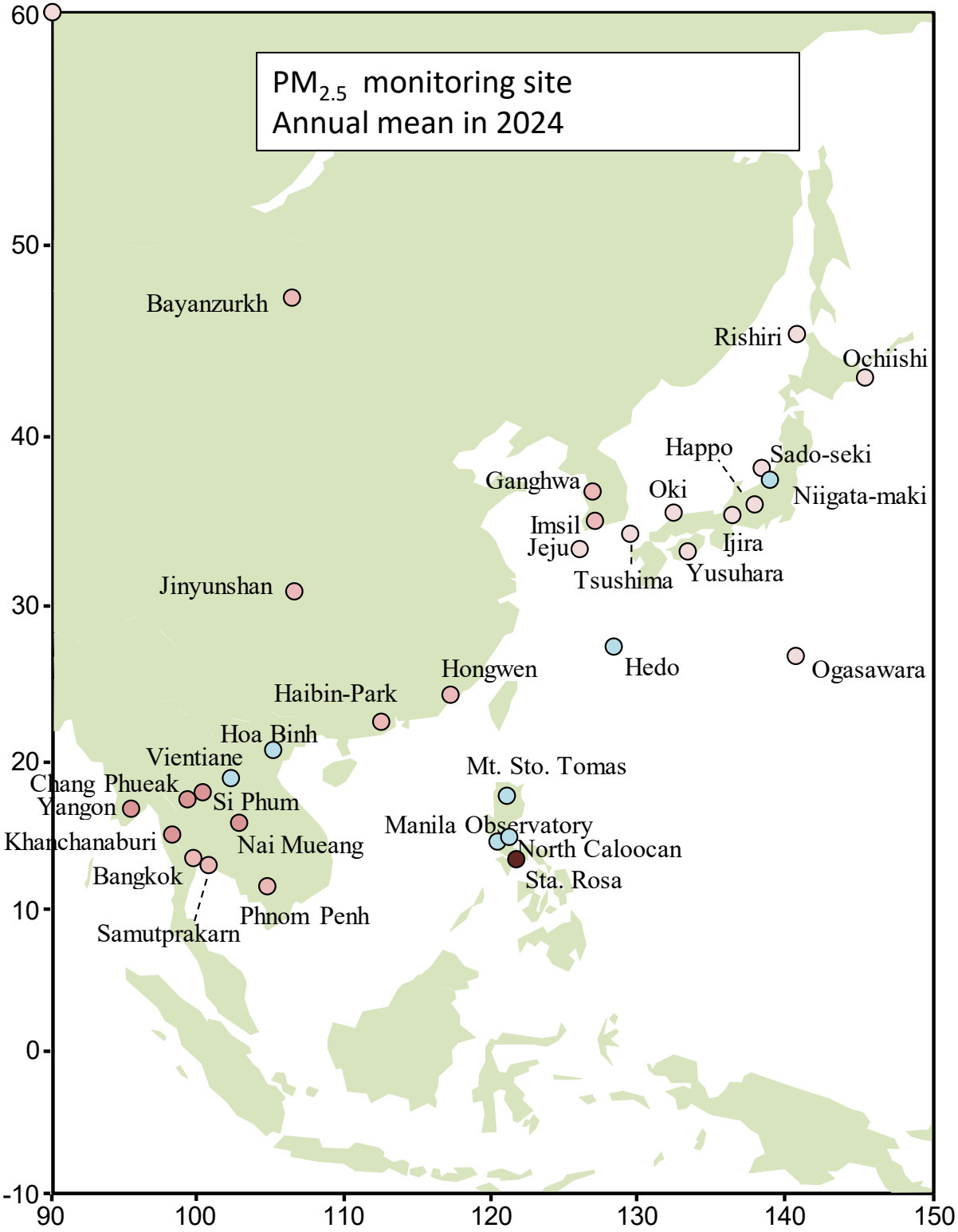
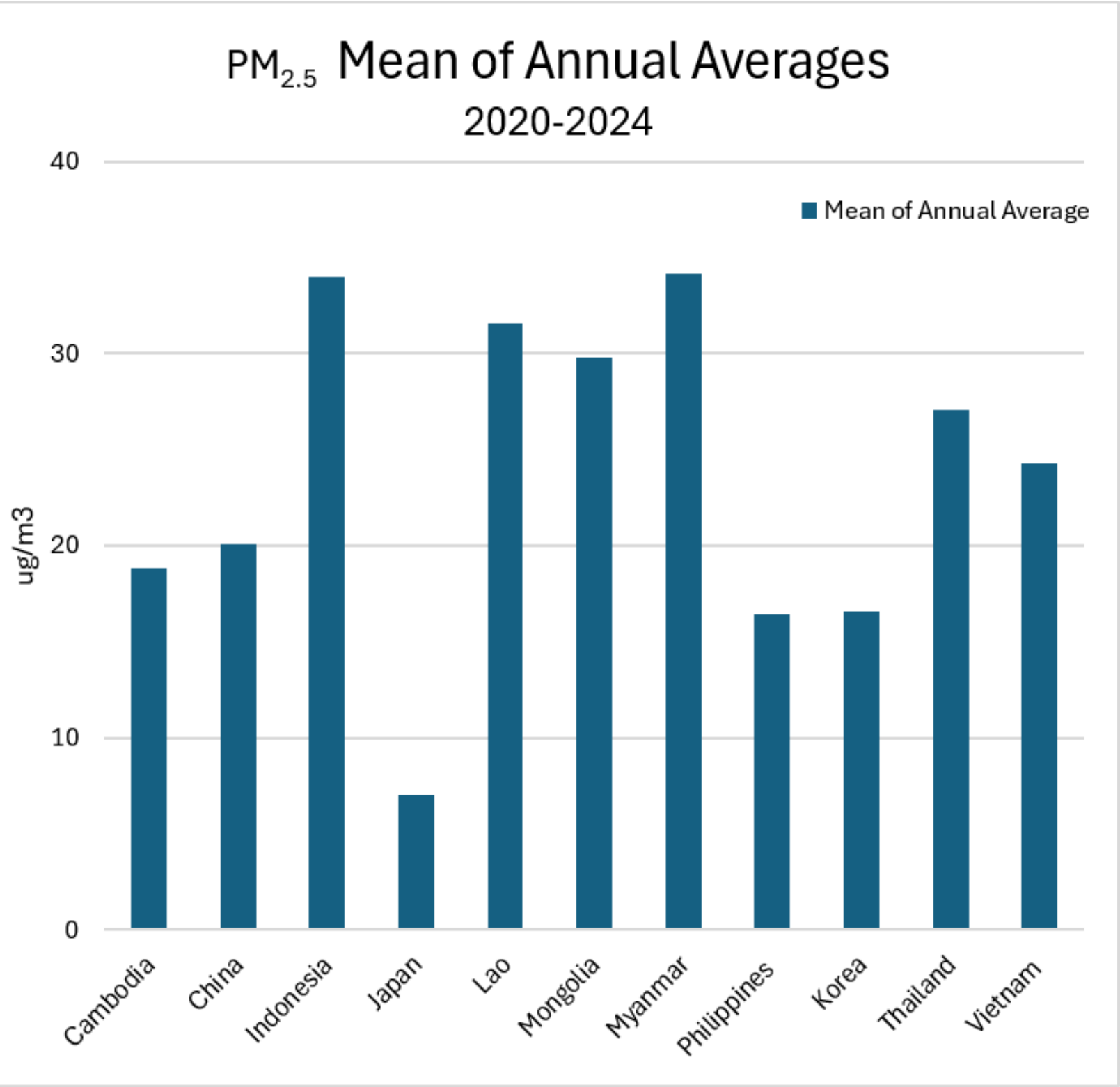
Current gaps within EANET

- Limited ozone and VOC monitoring capacity
- Insufficient harmonized VOC datasets
- Lack of integrated analysis of VOC–O₃ relationship



“Stronger regional scientific cooperation and policy support are needed”

PM_{2.5} is a Recurring Issue in SEA Driven by Transboundary Haze



Long Term Impacts on Ecosystem: Asymmetric Recovery

Surface Water



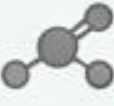
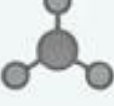
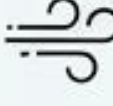
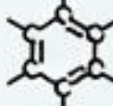
Inland water chemistry in some lakes/streams suggesting recovery from acidification, corresponding to the trends of atmospheric deposition, e.g., nss-SO_4^{2-} declining in soil and wet deposition.

Ecosystem Soil and Vegetation



Responses of soil chemical properties and tree growth are complicated, Long-term monitoring is necessary.

The Catalyst: The 2021 Strategic Expansion

Pre-2021 Foundations Focus on Acid Deposition	Post-2021 Expansion Comprehensive Atmospheric Environment
 SO2 (Sulphur Dioxide)	 PM2.5 & PM10 (Particulate Matter)
 NOx (Nitrogen Oxides)	 Surface Ozone (O3)
 NH3 (Ammonia)	 Dust and Sandstorms (DSS)
 Precipitation Chemistry (ions, pH)	 Volatile Organic Compounds (VOCs)

In 2021, EANET expanded its scope to align with the most pressing, complex atmospheric challenges of the 21st century.

Identifying the Gaps: Adapting to Modern Threats

The Pollutant Challenge

Managing the interconnected complexities of PM2.5, surface Ozone, NOx, NH3, and VOCs alongside dynamic meteorological impacts.



The Technological Upgrade

Integrating innovative observation methodologies, including deploying Satellite telemetry and Low-Cost Sensors (LCS), to augment traditional monitoring networks.



The Data Utilisation Gap

Improving emission inventory methodologies by applying AI to integrate vast, multi-source datasets for highly targeted, policy-relevant decision making.



Empowering the EANET Partnership

Strategic Context: EANET is one of the rare Intergovernmental Networks working globally on atmospheric environments that finances its own core activities.

1. Advocacy & Diversification

Mobilise partners as strategic advocates and diversify the donor base through new funding streams

2. Resource Expansion

Strengthen capacity for resource mobilisation and explore strategic partnerships to scale up project delivery

3. South-South Cooperation

Promote robust, peer-to-peer technical and policy cooperation across developing nations

25



2001-2026

The first MTP designed to fully address EANET's expanded comprehensive scope

5th MTP Outcomes
(2026-2030)

Understanding
(The Science)

Access
(The Information)

Cooperation
(The Action)

Outputs of the Blueprint: 2026 Project Portfolio



Advanced Monitoring & Tech

- Methodological Study on PM2.5 Source Identification (Southeast Asia focus).
- Capacity building on satellite observation applications.
- Webinars on meteorological influences on air quality.



Regional Capacity & Leadership

- Fellowship for building leadership in Air Quality Management.
- Technical and Training (TNT) capacity building for monitoring personnel.
- International Training for Government Officials (South/Southeast Asia).

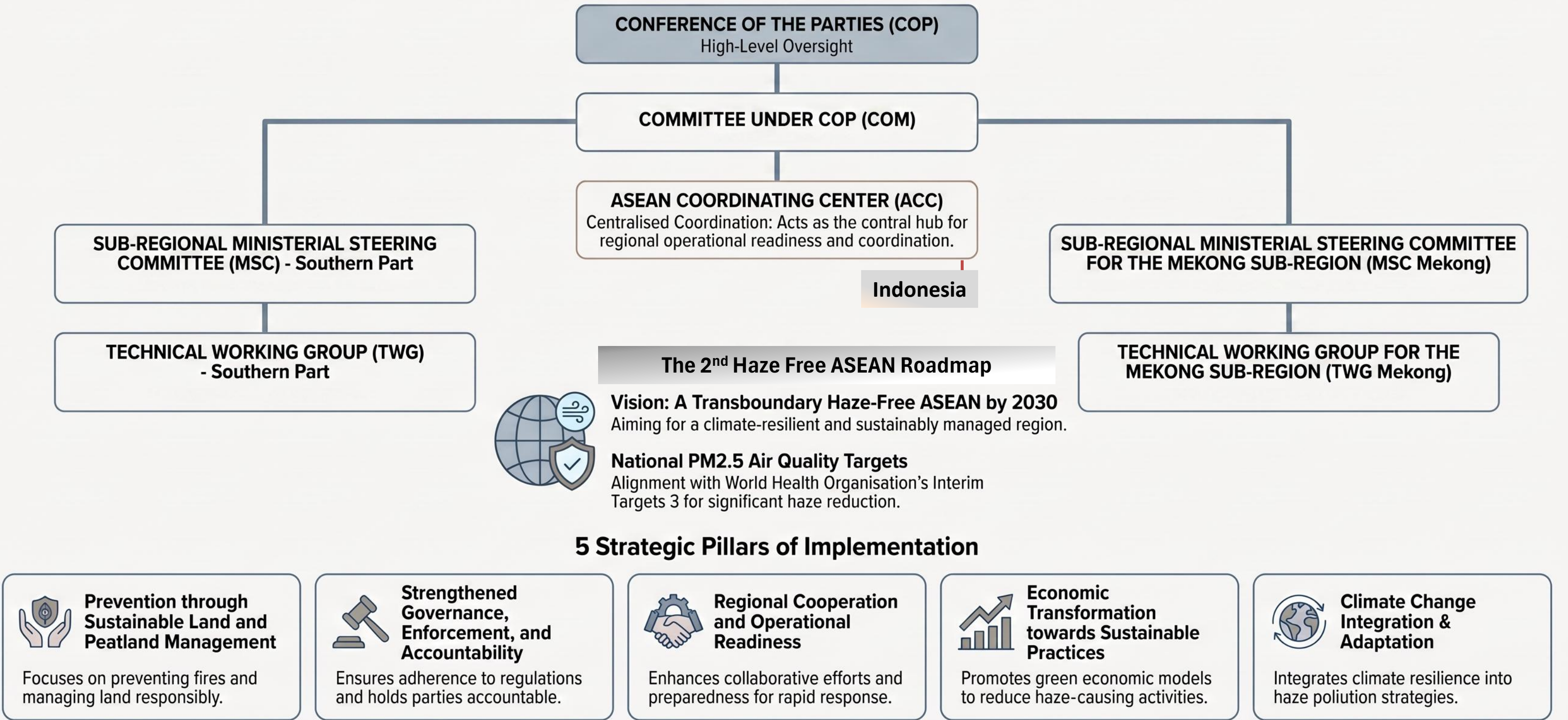


Policy, Agriculture & Financing

- Sustainable agricultural practices for clean air (Mekong region).
- Capacity building on Air Quality Legislation.
- Strengthening capacity in Financing Strategies for Project Planning.

ASEAN Agreement on Transboundary Haze Pollution: AATHP

Prevent, monitor, mitigate transboundary haze pollution from land/forest fires, through concerted national efforts, intensified regional & international co-operation





ACAP/EANET: Shaping the Future of Clean Air

“Stronger Cooperation, Cleaner Air, Sustainable Future”



Standardised Monitoring & Data Analysis



Dry/Wet
Deposition



Inland Aquatic
Environments



Ecosystems



Bridging Science, Policy, and Nations

Serving as the region's trusted scientific platform for advancing atmospheric environmental management

Expanding Scope of Work



Scaling up the network's mission to address broader air pollution challenges through a comprehensively equipped platform.

25 Years of Scientific Excellence

25

A milestone of intergovernmental trust serving as the essential scientific platform for the East Asian region.

Future Outlook for Clean Air

Integrated Air Quality and Climate Action



Driving resilience by aligning climate adaptation and mitigation with local leadership.

Global and Community Coordination

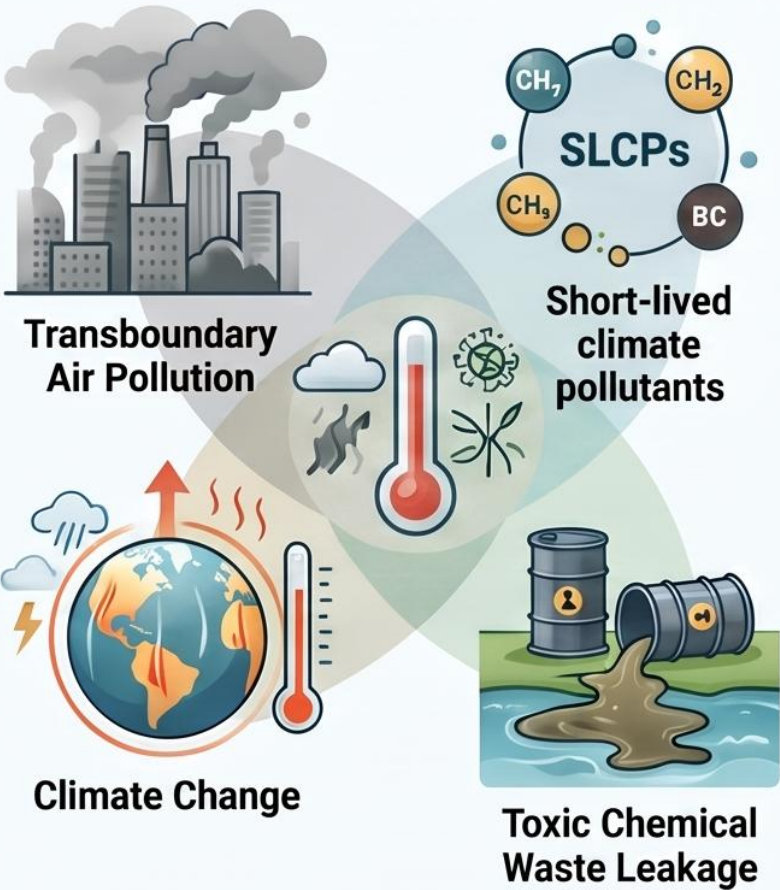


Leveraging community engagement, South-South cooperation, and interregional coordination for sustainability.

Strategic Dialogue: Advancing Future Cooperation on Environmental Challenges in Southeast Asia

Regional Challenges & Strategic Objectives

Interconnected Environmental Pressures



Integrated Strategic Goals



Context Summary: A roadmap for research institutions and international agencies to synchronize policy, technical expertise, and regional implementation networks.

Forward-Looking Strategic Areas



Participating Regional & International Partners

UNEP, UNDP, ADB, GIZ, SEACAI, CAA, AIT, JICA, MOEJ, Kawasaki City, Yokohama City, ACAP, JESC

Marking a quarter-century of continuous intergovernmental collaboration



Future Outlook

The robust data-to-policy pipeline built over the last 25 years is scaling rapidly. Our international frameworks are evolving right now to meet and mitigate the transboundary atmospheric challenges of the next decade.