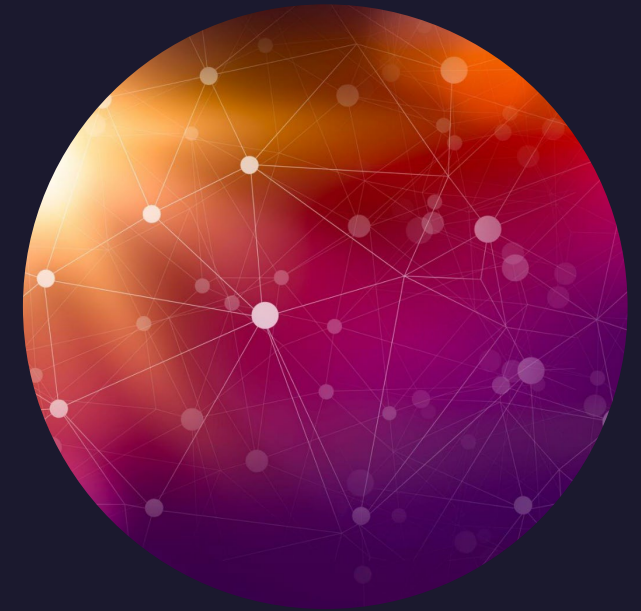


VOCs: Volatile Organic Compounds

EANET VOCs Project in Philippines



Meihua ZHU

Chief Senior Researcher

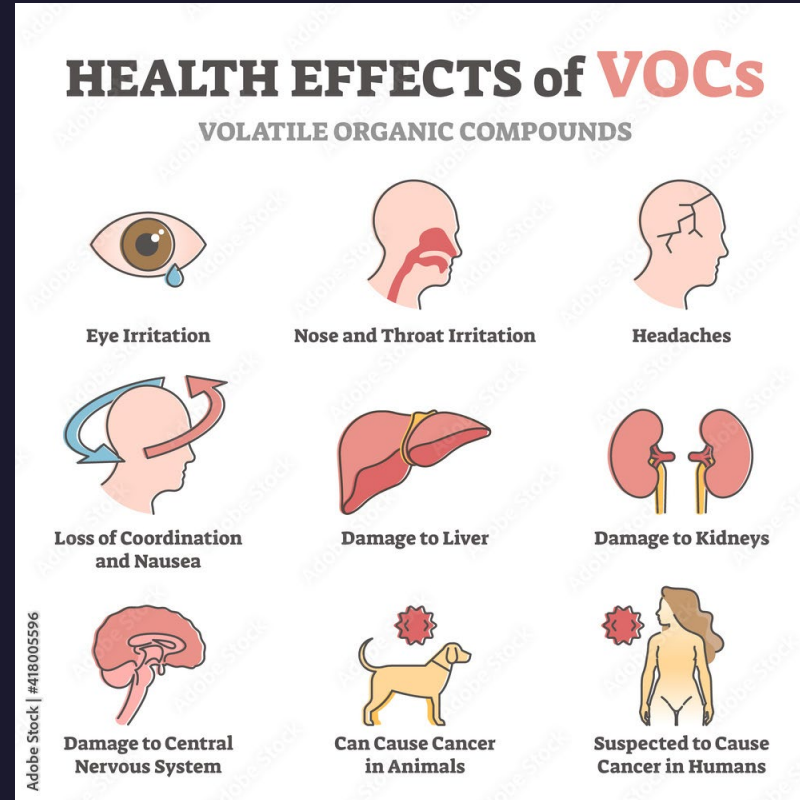
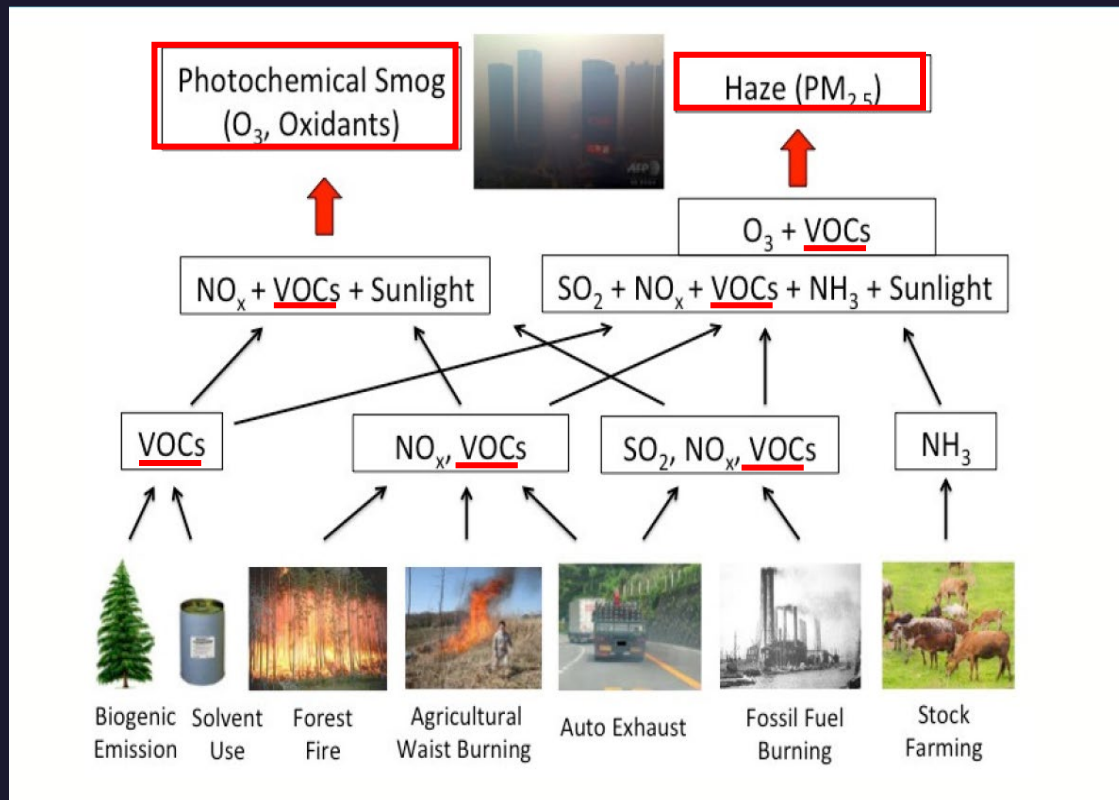
**Asia Center for Air Pollution Research
Network Center of Acid Deposition Monitoring Network in
East Asia (EANET)**



Motivation – 1: Adverse Effects

Air quality (Formation of O₃ and PM_{2.5})

Health

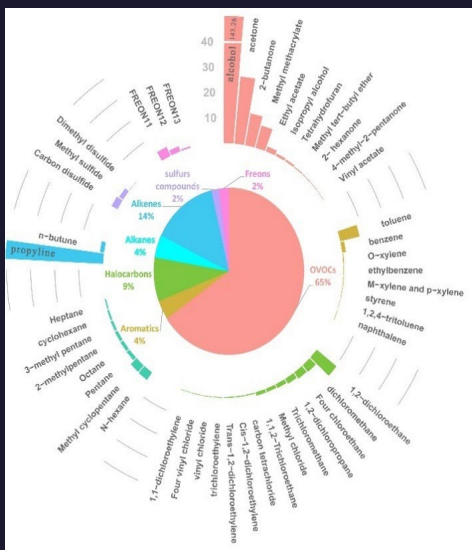


Motivation – 2: Challenge of Monitoring and Control



Complicated VOCs monitoring and measurement

A number of species



Various types of
monitoring
methodologies



relatively high cost
of instruments



Delayed government guidance on VOCs in the EANET region

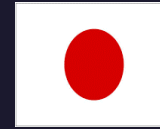
only few countries in the
EANET region (13 countries)
have guidance on VOCs
control, for example, China,
Korea, Japan, Thailand
already have VOCs relevant
regulation, air quality
standards and emission
standards.

Framework of the VOCs Project

(2024-2026)

Project leader:

The Ministry of the Environment, Japan (MOEJ)



Establish VOCs Monitoring and Measurement Methodology



Development of VOC Air Quality Guideline Values and Air Quality Index



VOCs Control and Managements



Methodology Development for the Study on the Contribution to Secondary Organic Aerosols (SOA) from VOCs



The Pilot Cities



Progress of EANET VOCs Project in 2024

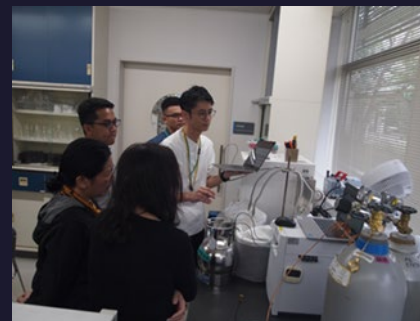
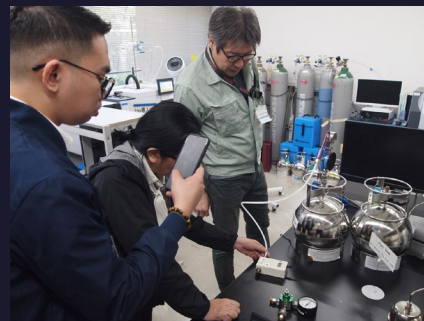
Capacity Building: Effort from the EANET

Lab Training on VOCs Monitoring and Measurement

ON-DEMAND
LECTURE
PROGRAM



HANDS-ON
TRAINING



Site Visit in Japan and R. of Korea

GL Sciences Group, Japan



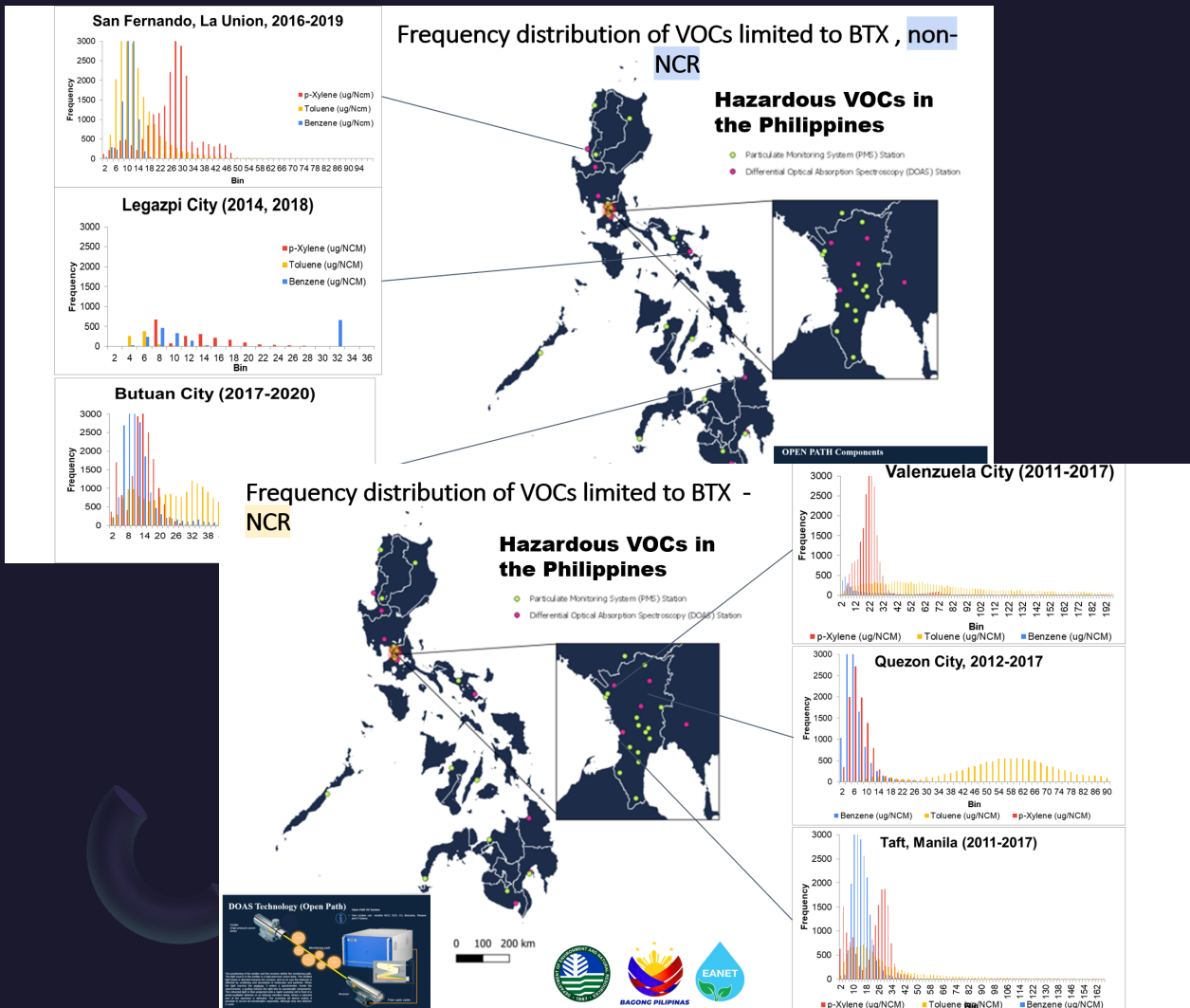
VOCs Monitoring sites and Labs, R. of Korea



Progress of EANET VOCs Project in 2024

- Effort from the Philippines -

Utilization of VOCs Data Measured by the DOAS



VOC Monitoring Project Progress in 2024 VOCs Laboratory Testing and Sampling (USEPA To 14,15,15A)

- EMB Central Office Laboratory acquired a Gas Chromatograph with Mass Spectrometer and Flame Ionization Detectors (GC-MS/FID)

Method TO-15A

Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography–Mass Spectrometry (GC-MS)

U.S. Environmental Protection Agency
Office of Research and Development
National Exposure Research Laboratory
Office of Air Quality Planning and Standards
Air Quality Assessment Division

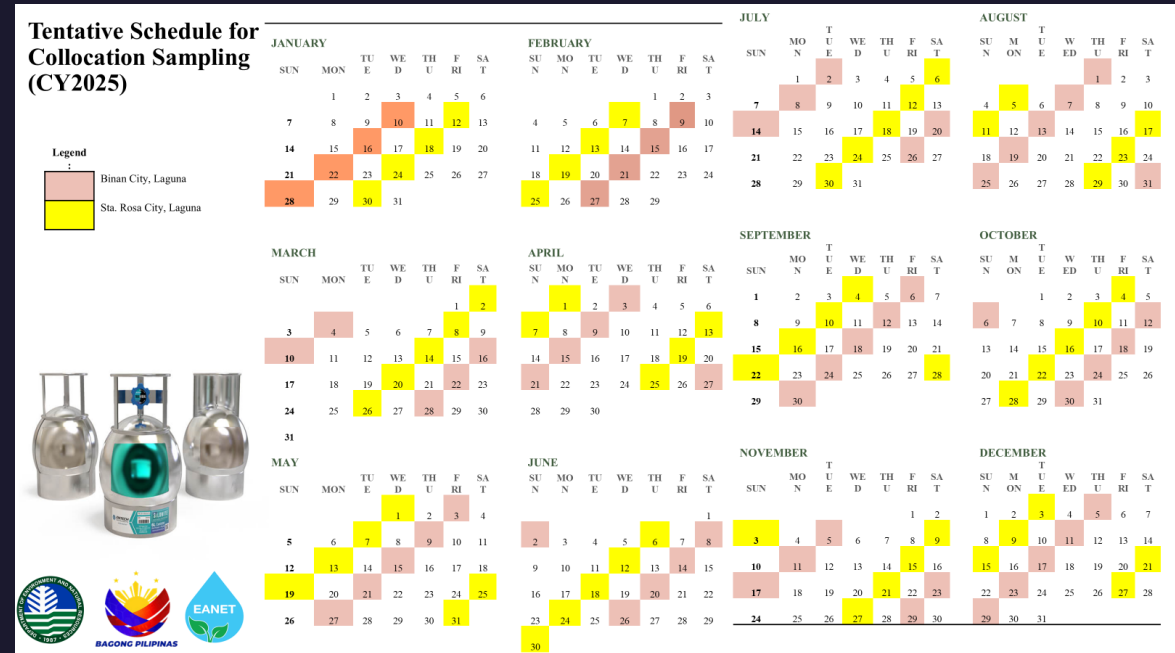


Agilent 8890 GC-MS/FID and Entech 7200A installed September 21, 2024

&

The Way Forward in the Philippines in 2025

- Monitoring of VOCs using TO-15 method, Benzene, Toluene, and P-xylene and Collocation Plan starting January 2025.
- Design the intensive sampling plan to compare the methodologies including canister, sorbent-tube/passive sampler, DOAS, on-line monitor in the air quality sites of the Philippines in early 2025.
- Draft VOC Air Quality Guideline Values and Air Quality Index in the Philippines.



Achieved and Expected Achievements

Activities

Outputs/Outcomes

Contribution to

Capacity Building and technical support

- ✓ Improvement of the operation skills
- ✓ Establishment of capability

Human resource development



Monitoring and Measurement

- ✓ Understanding VOCs Chemical Compounds and its concentrations
- ✓ Understanding the contribution of VOCs to the formation of PM2.5 and ozone

Mitigation of air pollution and climate change



Development of VOC Air Quality Guideline Values and Air Quality Index in the Philippines

- ✓ Proper management by government
- ✓ Accurate AQI information Disclosure to the Public

Mitigation of adverse health effects, especially for vulnerable groups



Contribution to the Business Matching in the Environmental Sector



Understanding

Provision of experience in operation of devices and consumables



Trustiness

Provision of platform and international network



Knowledge

Provision of science and technical guidance

Advisory group members



Chair



Dr. Toshimasa Ohara,
Director General,
Asia Center for Air Pollution Research
Network Center for the EANET

Covers Scientific research field of
1) Monitoring, 2) Measurement,
3) Atmospheric mechanism/process,
4) Source Apportionment, 5) Inventory,
6) Impact and control policy

Members

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Environment

*Thank You
for Listening*

