LCS monitoring in EANET Project

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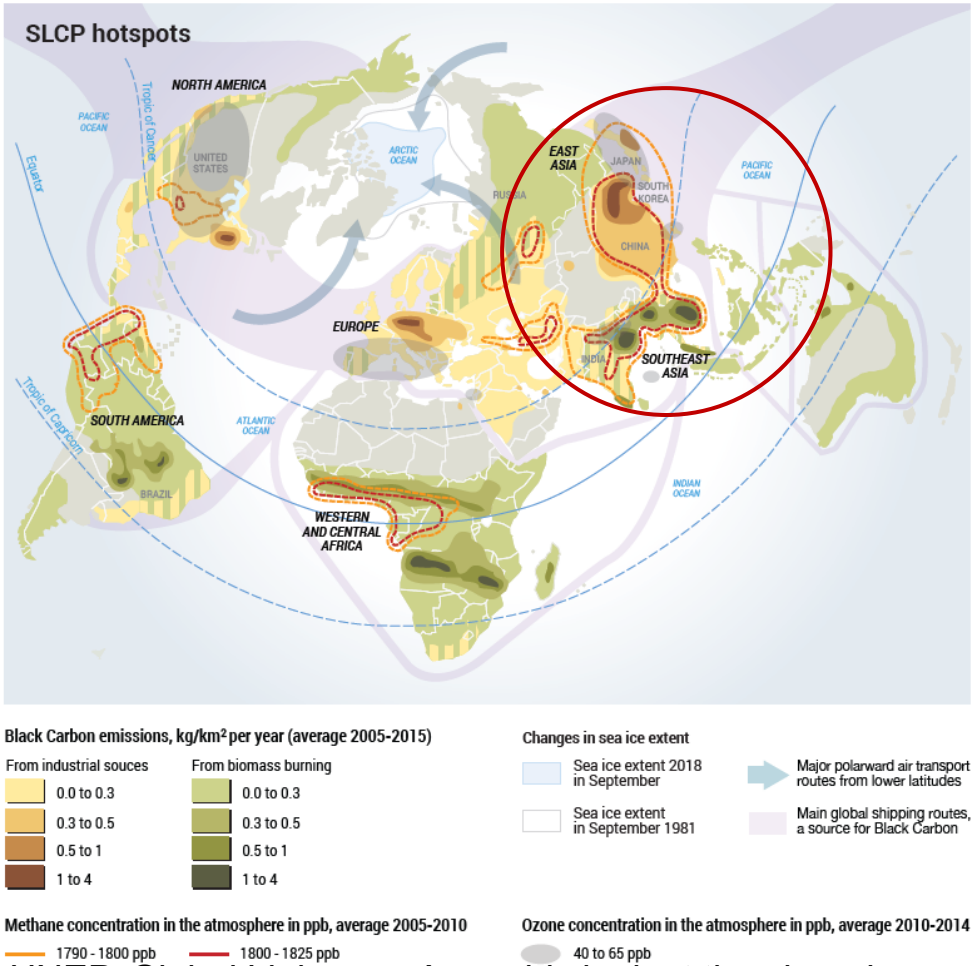
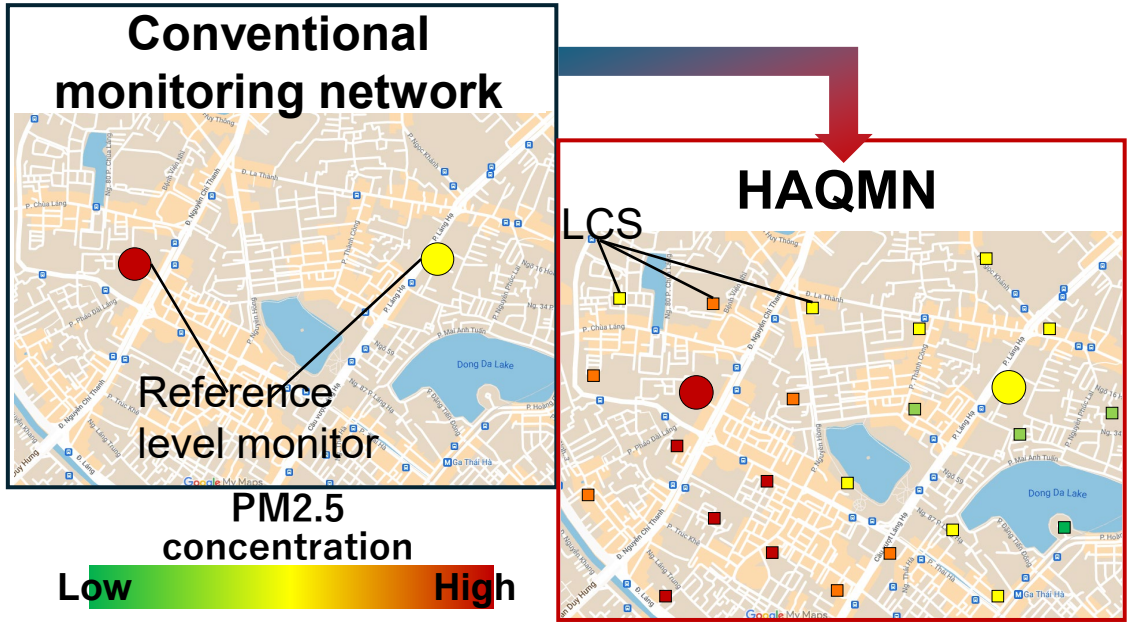
Status of Air Pollution and Monitoring in Asia

Asia is one of the world's significant hotspots for Air Pollution.



UNEP, Global Linkages- A graphic look at the changing Arctic, (2019).

The number of air quality monitoring stations are insufficient in South and Southeast Asia.

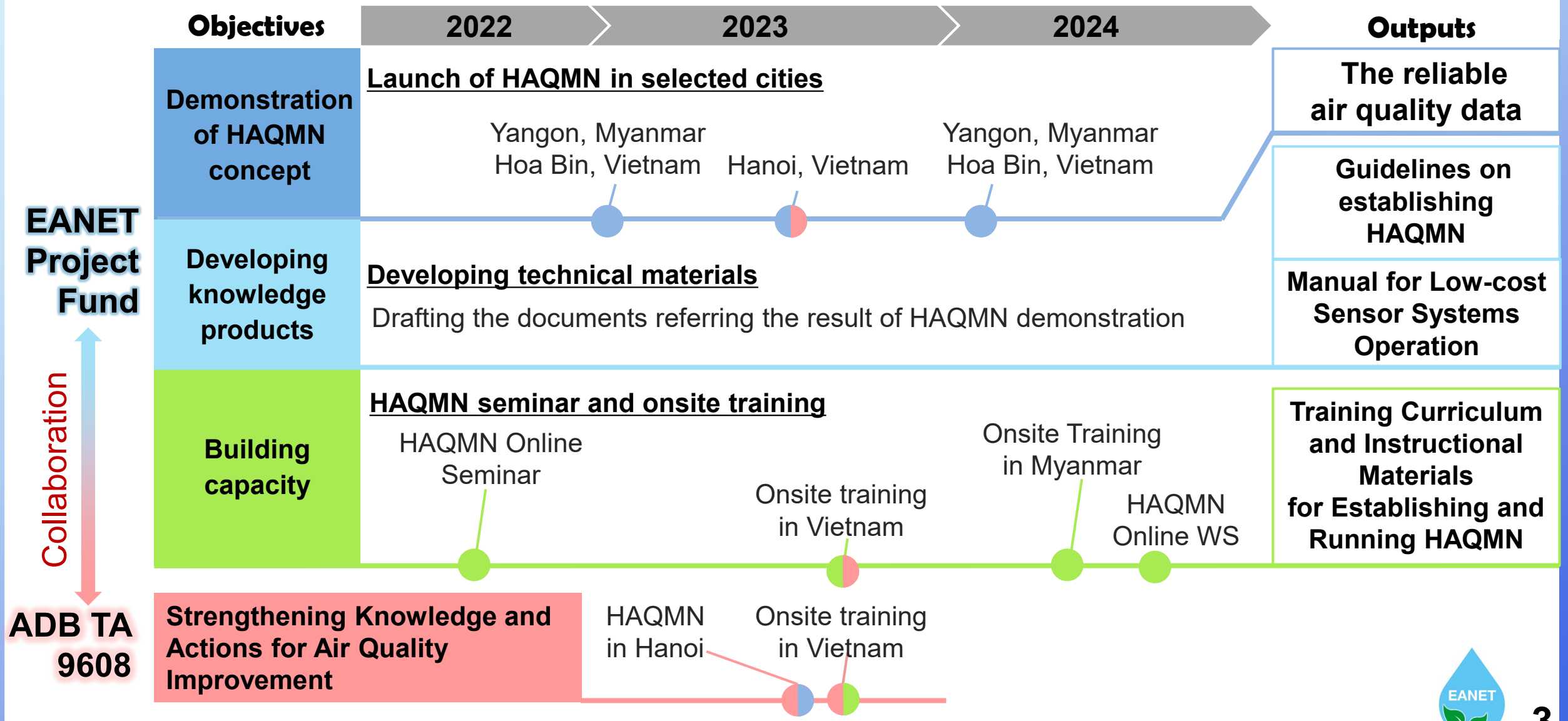


Hybrid Air Quality Monitoring Network（HAQMN）

The network combining reliable LCS at many sites and reference level monitors.

Promotion of HAQMN is cost-effective for air quality management in Asia.

Objectives and implementation of HAQMN project

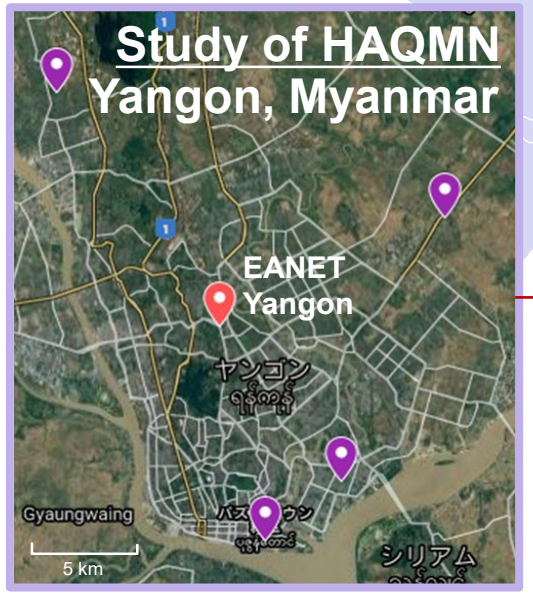


HAQMN Project progress and result

PM2.5, O_3, NO_2 sensor

Green Blue Inc.

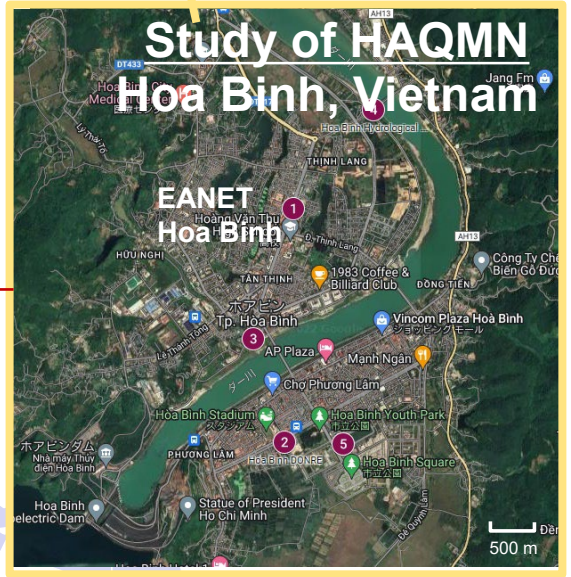
Model: Gbiot-FH0



PM2.5 sensor

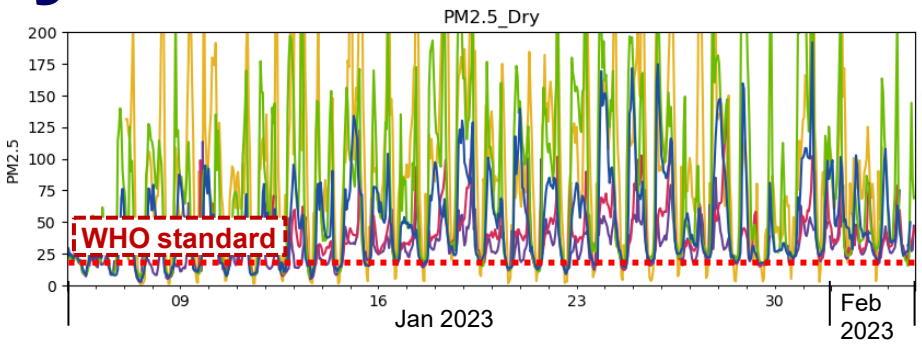
Sibata Science Technologies

Model: P-sensor

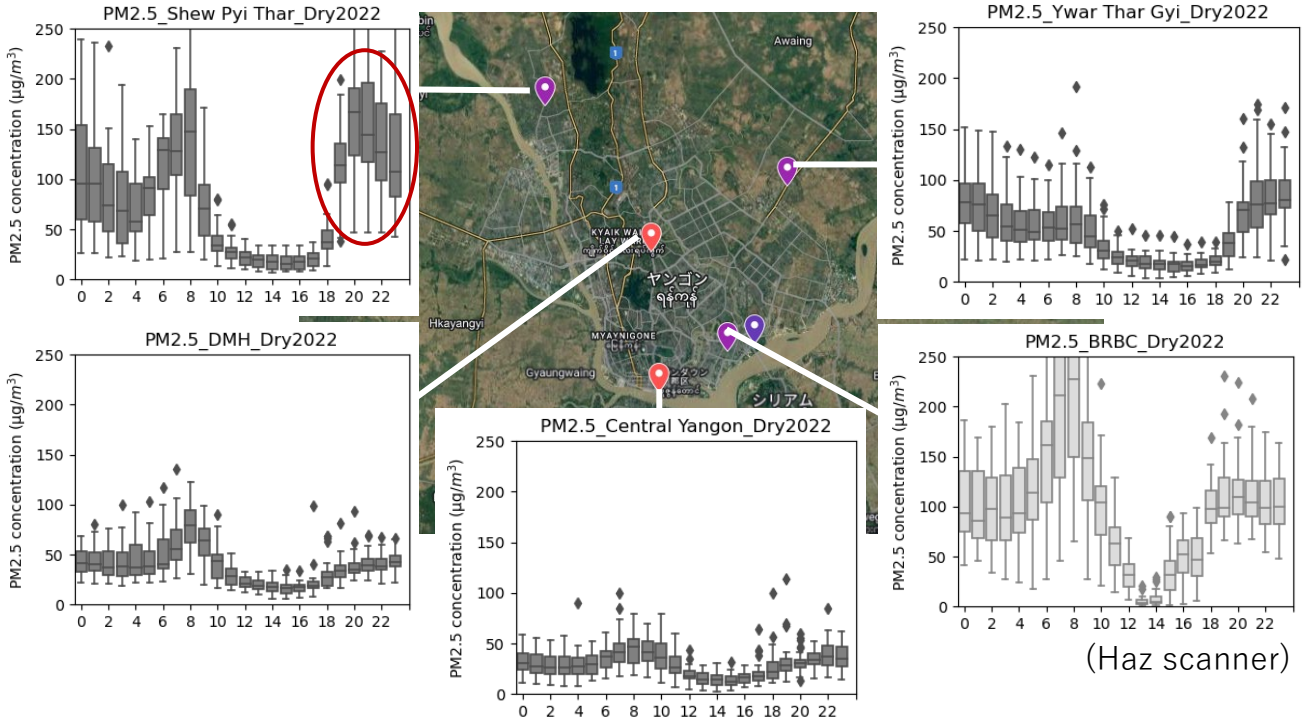


LCS data analysis in Yangon, Myanmar

- ✓ PM2.5 concentration excessed WHO standard in dry season.
- ✓ Different diurnal variations in each monitoring station.
  One monitoring station shows over 150 μg/m^3 in the nighttime.
- ✓ PM2.5 concentration increased when wind came from SE (city center).

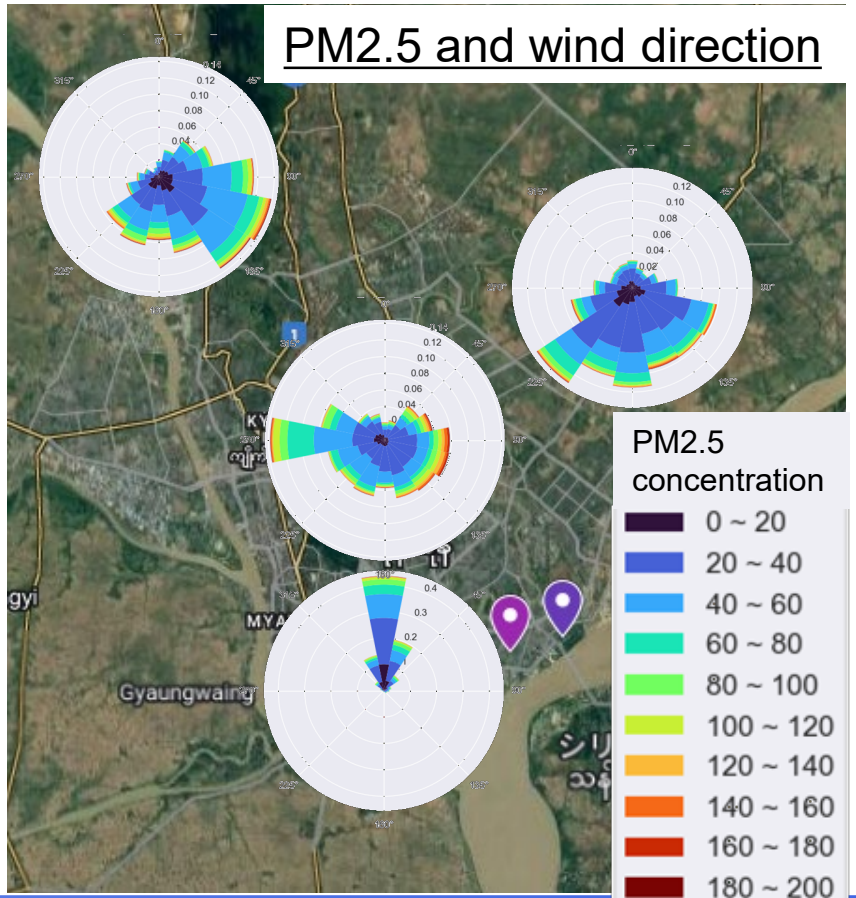


PM2.5 diurnal variation

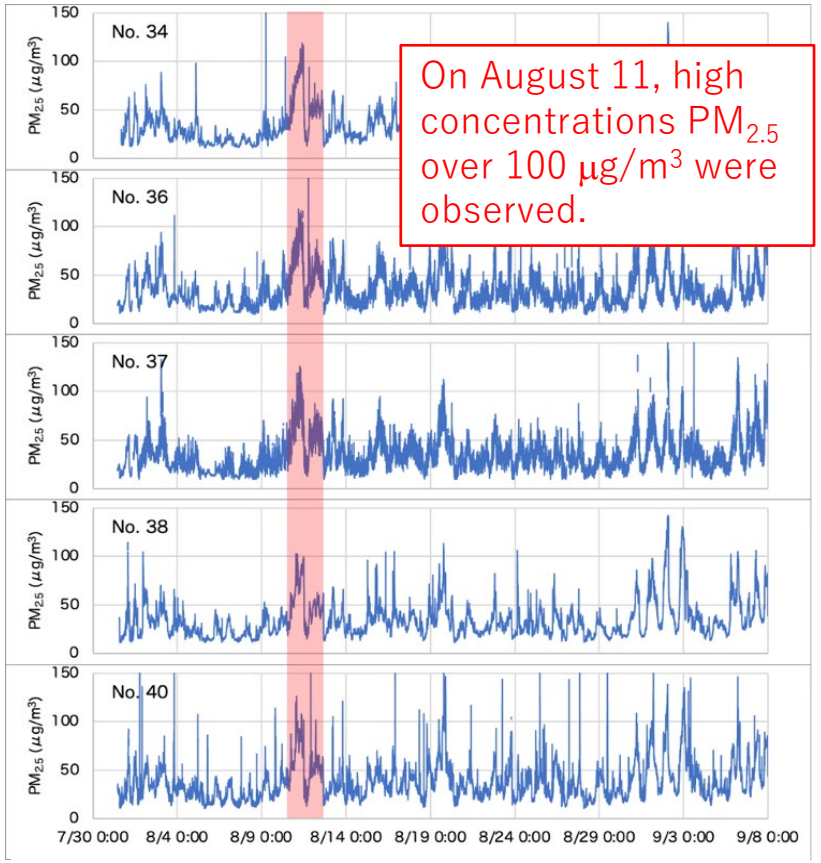


(Haz scanner)

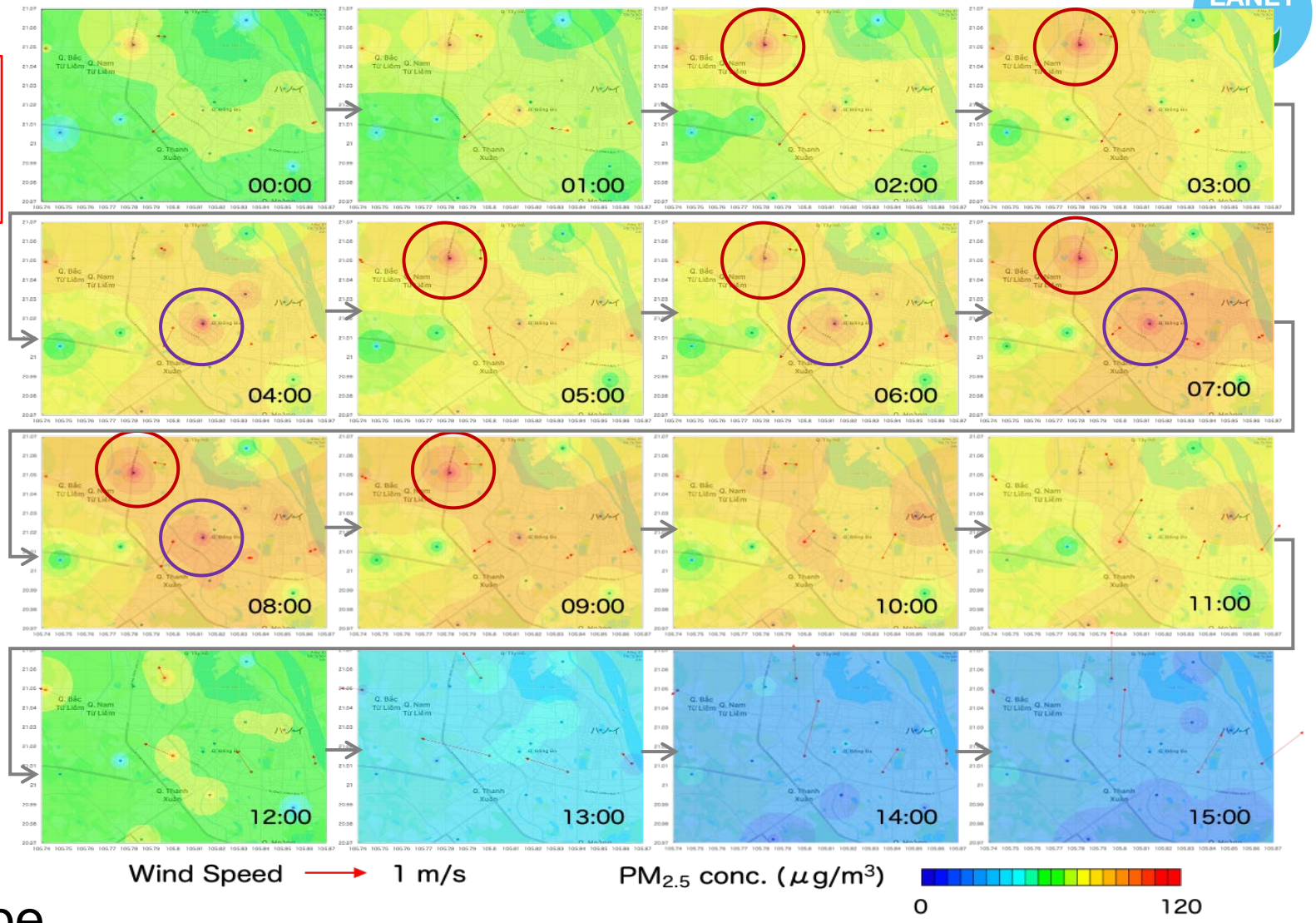
PM2.5 and wind direction



LCS data analysis in Hanoi, Vietnam



On August 11, high concentrations $PM_{2.5}$ over 100 μg/m^3 were observed.



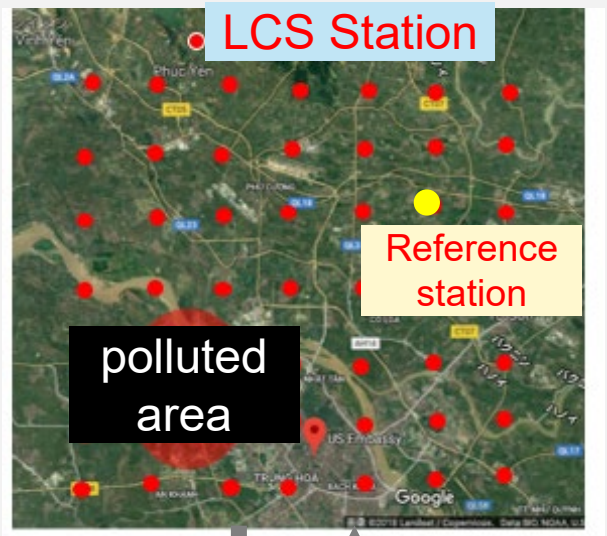
Temporal and spatial distribution of PM2.5 can be obtained from LCS data.

Hourly data inside Hanoi city shows the two different PM2.5 hot spots.

Synergy of LCS monitoring and other monitoring method for countermeasure of Air pollution mitigation

High dense HAQMN

Focusing on inside city



Sources inside mega city

Information of long-range transport

Satellite observation

Regional / global observation

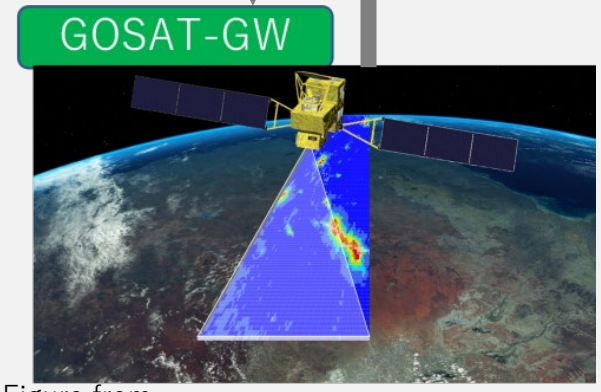
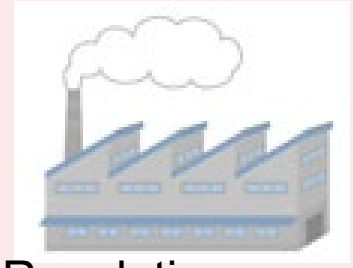


Figure from https://www.satnavi.jaxa.jp/ja/project/gosat-gw/

Mega city

Identification of pollution sources, emission area

Effective measures



Regulation on stationary sources Change fuels etc.

Regulation on mobile sources (automobile, motorcycles etc.)

Regulation on open burning and agriculture

Multi-point LCS data and collaboration with other monitoring (ex. GOSAT-GW) will lead to the comprehensive understanding of emission, transport, removal processes, which can contribute to effective reduction measures.

Thank you for your attention

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