NEACAP Policy Analysis Report
Highlights and Recommendations

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NEACAP 2nd Policy Dialogue
23 September 2025, Ulaanbaatar, Mongolia

In a nutshell

This report examines recent **progress and challenges in managing air pollution** in North-East Asia.

While the **progress is notable**, continuing the forward momentum will require addressing **several emerging challenges**.

Many of these challenges can be turned into **opportunities**, for example **by leveraging synergies between air quality, climate**, and other development priorities **to craft more cost-effective policies**.

Strengthening regional collaboration on environmental data management can build upon the recent successes and ensure North-East Asia's future generations enjoy clean air.

https://www.unescap.org/kp/2025/success-and-challenges-addressing-air-pollution-north-east-asia-call-strengthen-regional

Air Pollution and Air Quality Trends

Lots of success in improving air quality across the Northeast Asia region

- Ambitious policies and legislation and continuously improving enforcement
- Expansion of air quality monitoring and remote sensing networks
- Development of emission inventories and application of atmospheric models

Despite successes, $PM_{2.5}$ level remain above WHO guidelines and national standards (especially in urban areas) and ozone needs further attention

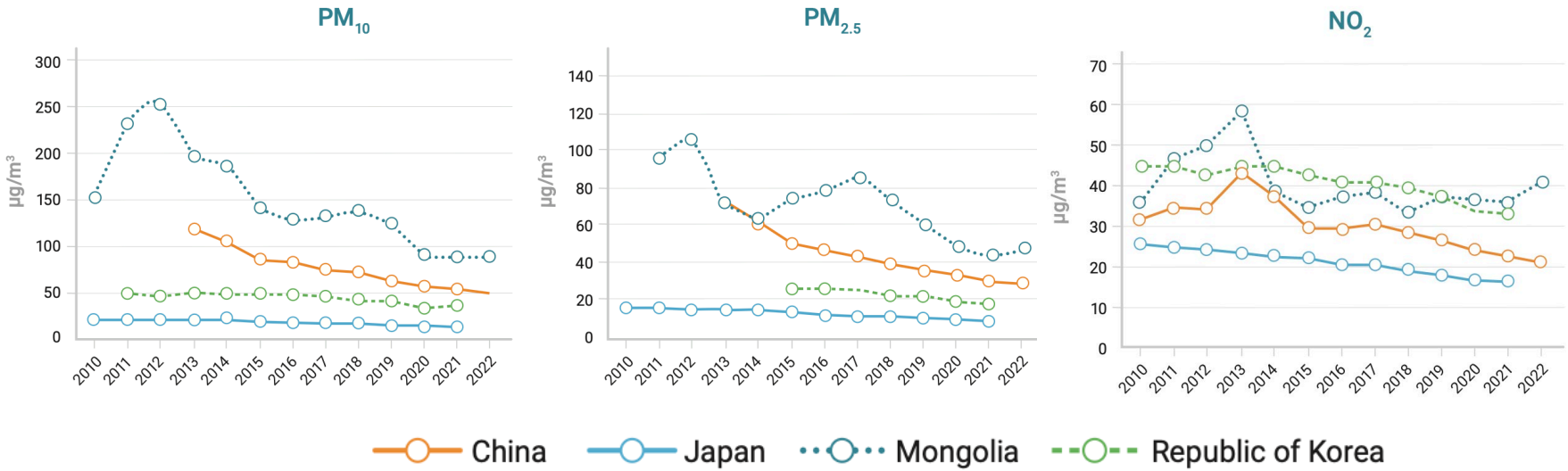
- Ozone has not declined, largely due to increasing NMVOC and CH_4, also global CH_4 emissions
- Emissions from agriculture (ammonia), show no decline and yet there is a lack of policies

Scope for improved integration of climate change and air quality policies

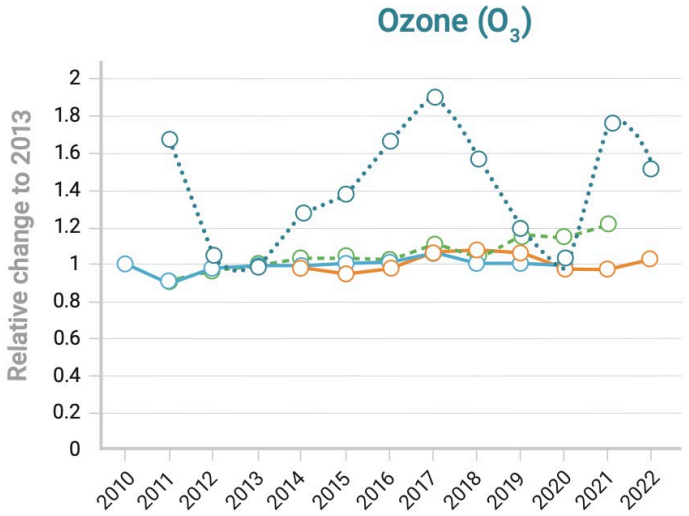
Opportunities for regional collaboration

Air quality trends

Annual average concentrations of key air pollutants since 2010



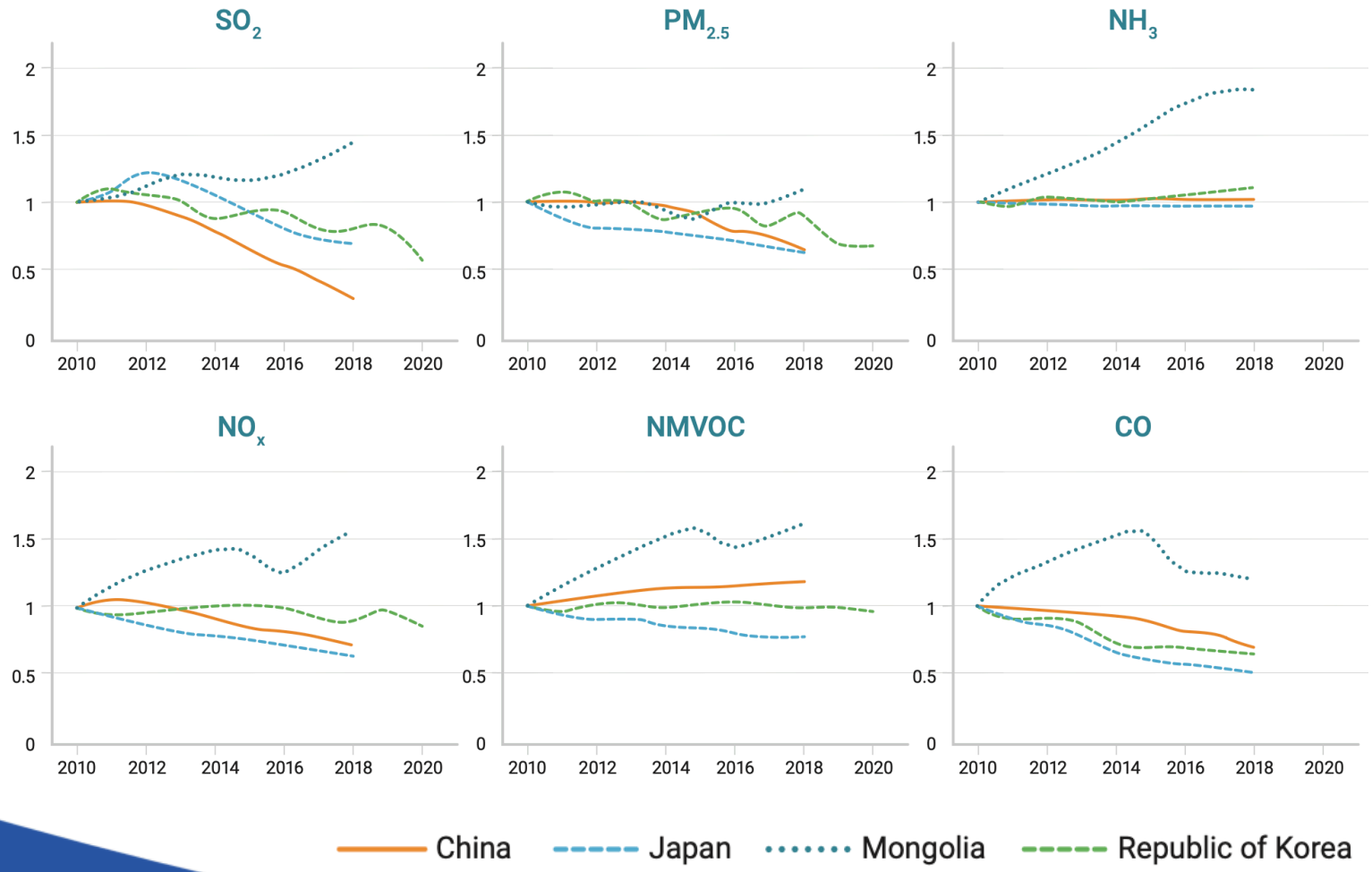
ARE WE DONE?



QUO VADIS *OZONE?*

Representation of ozone trends and concentrations (varying metrics across the countries); relative change shown

Trends in anthropogenic emissions of key precursors of ambient $PM_{2.5}$ and ozone

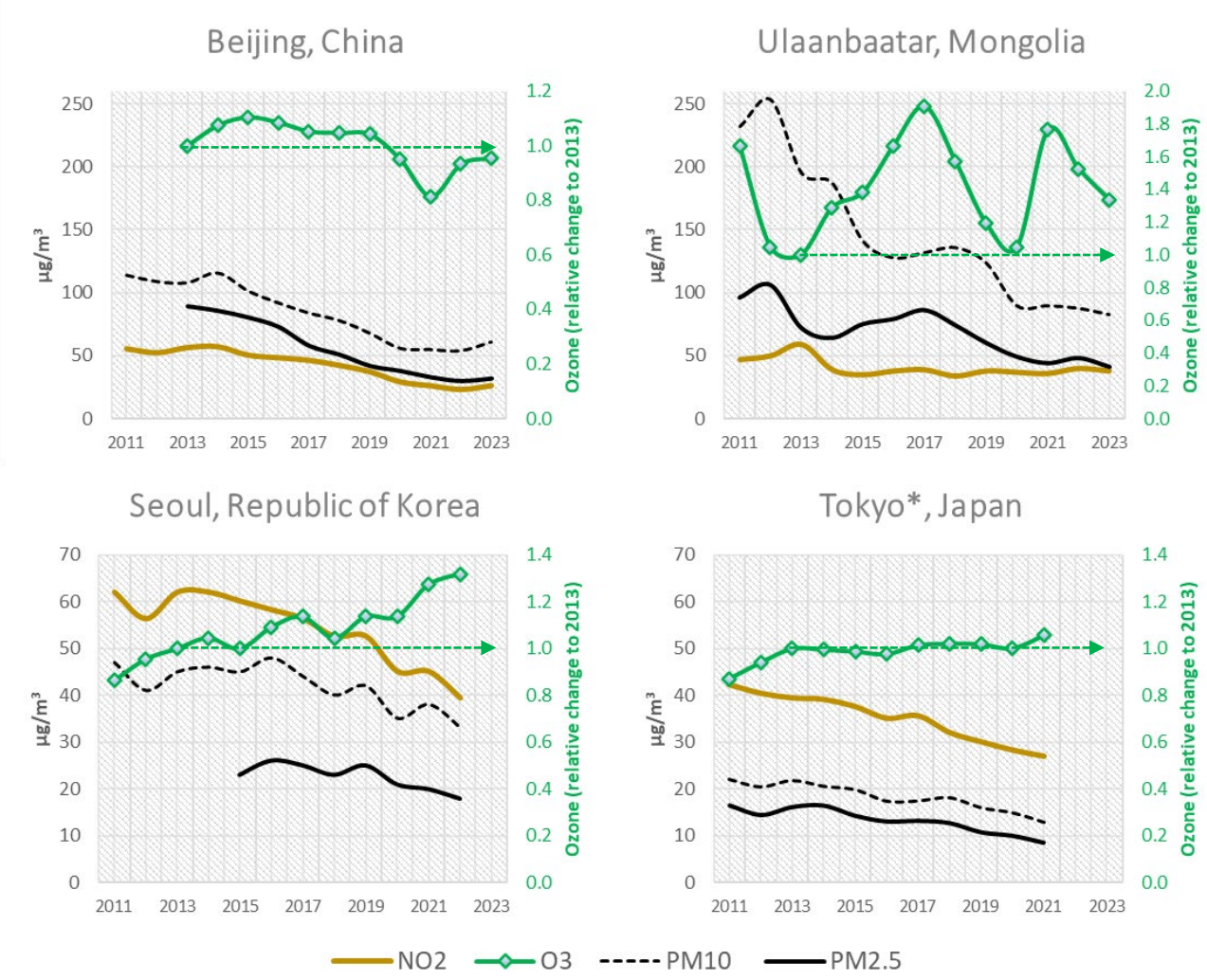


Air quality legislation as well as policies addressing energy and resource efficiency have played a **key role in** constraining growth and **reducing emissions** for most pollutants,

No change for ammonia with agriculture sector being key. Slower reduction also for NMVOC.

While degree of reduction varies across countries, **trends for Mongolia distinctly different** where strong economic growth fuels increase in emissions in spite of existing legislation.

Average annual concentrations of key air pollutants in capital cities



The **trends** are generally **similar to the national** air quality trends (even stronger decline), **except for ozone** where most capital cities measure steady increase, and this is also the case for several other cities in the region.

The **capitals show higher levels of air pollution** than the national average and this is common for most larger cities in the region.

While cites need to act locally, collaboration with neighbouring jurisdictions would bring important benefits.

Shown ozone concentrations are not directly comparable across cities since they are reported in different ways (see report for details).

Regulations and Policies

- Countries **established ambient air quality standards**, which continue to be updated to align with the WHO guidelines, to the possible extent
- **Regulations and emission limit values have been implemented** for key air pollutants; less progress in agriculture and ammonia emission

Further potential exists; promote adoption of advanced emissions control technologies in industries and vehicles to meet more stringent standards

- **Each country has legal framework to enforce air pollution control**, with specific laws targeting atmospheric pollution and environmental impact assessments

Enhance enforcement of existing legislation & sharing experiences to bolster institutional capacity

Scope for improved integration of climate change and air quality policies

Challenges and opportunities

- Economic, technological, institutional, and social challenges hamper (delay) effective implementation of some policies

Limited and varying experience in addressing them calls/offers scope for collaboration

- Despite overall progress, WHO guidelines remain often exceeded
- Managing emissions of VOCs, NOx, and NH_3 remains a challenge, also worldwide
- Urban air pollution influenced also by sources outside of city jurisdiction

Call for regional collaboration involving multiple stakeholders

- Climate change is expected to worsen air quality through increased heatwaves and wildfires

Scope for improved integration of climate change and air quality policies;

Opportunity for regional collaboration

Possible next steps

Selected opportunities/recommendations to further advance regional collaboration

- Collaboration in North-East Asia can **facilitate further knowledge and technology sharing**, leading to more efficient policies, securing support of the public and other stakeholders, while **robust monitoring is crucial for tracking progress**

- **Strengthened collaboration between (and within) the climate and air quality modeling communities** would lead to improved understanding of regional, national, and local air quality changes and links to climate change

- Achieving WHO Air Quality Guidelines necessitates simultaneous climate and air quality measures, supported by **scientific research and collaborative programmes**

- Need and opportunities for **multistakeholder collaboration in cities***

  * *Regional cooperation and integrated policies involving multiple stakeholders within the country.*

Relationships and responsibilities across national and regional levels based on the policy options