Health benefits of climate and clean air policies in ASEAN

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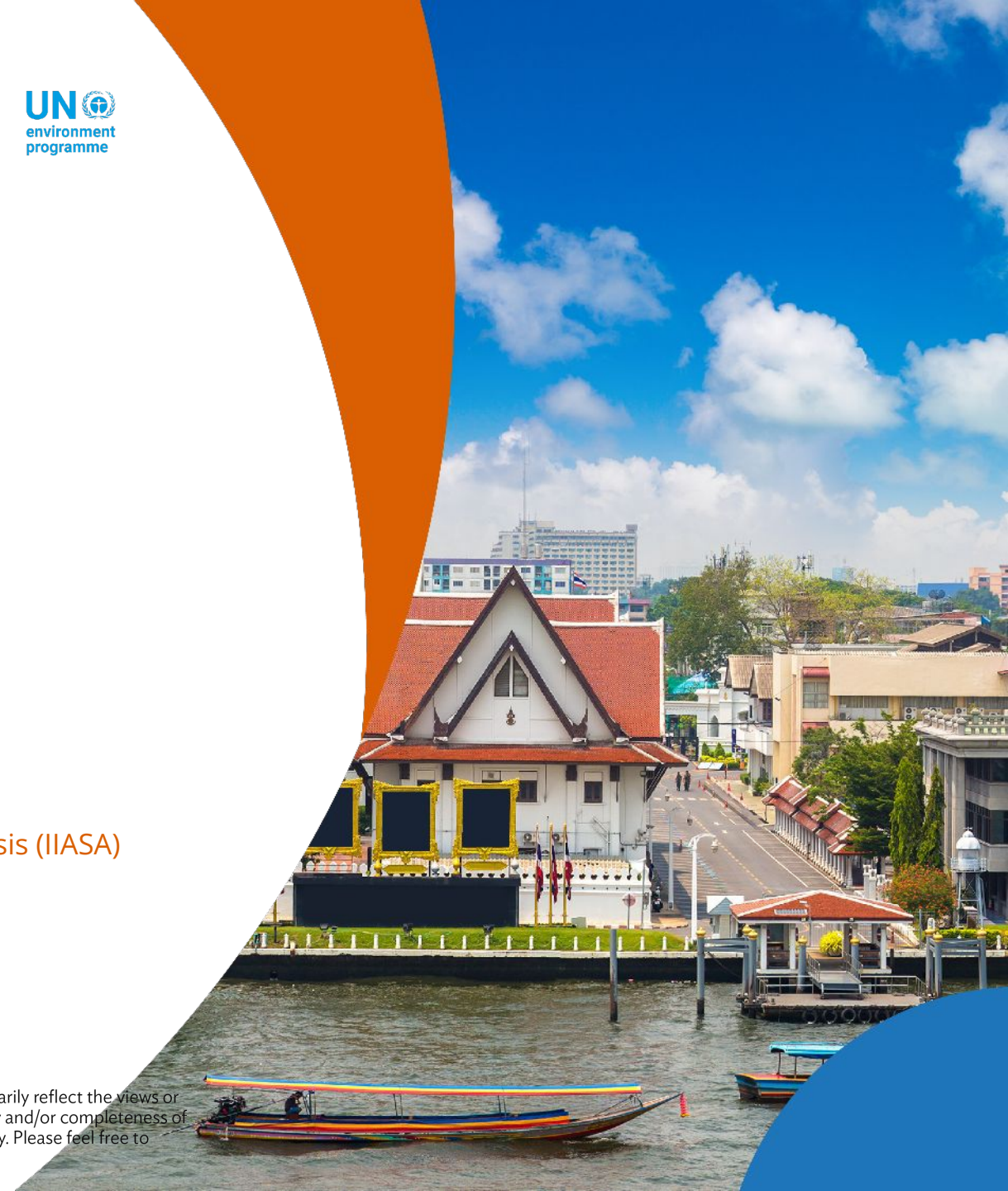

Co-Benefits of Addressing Air Pollution and Climate Change in ASEAN

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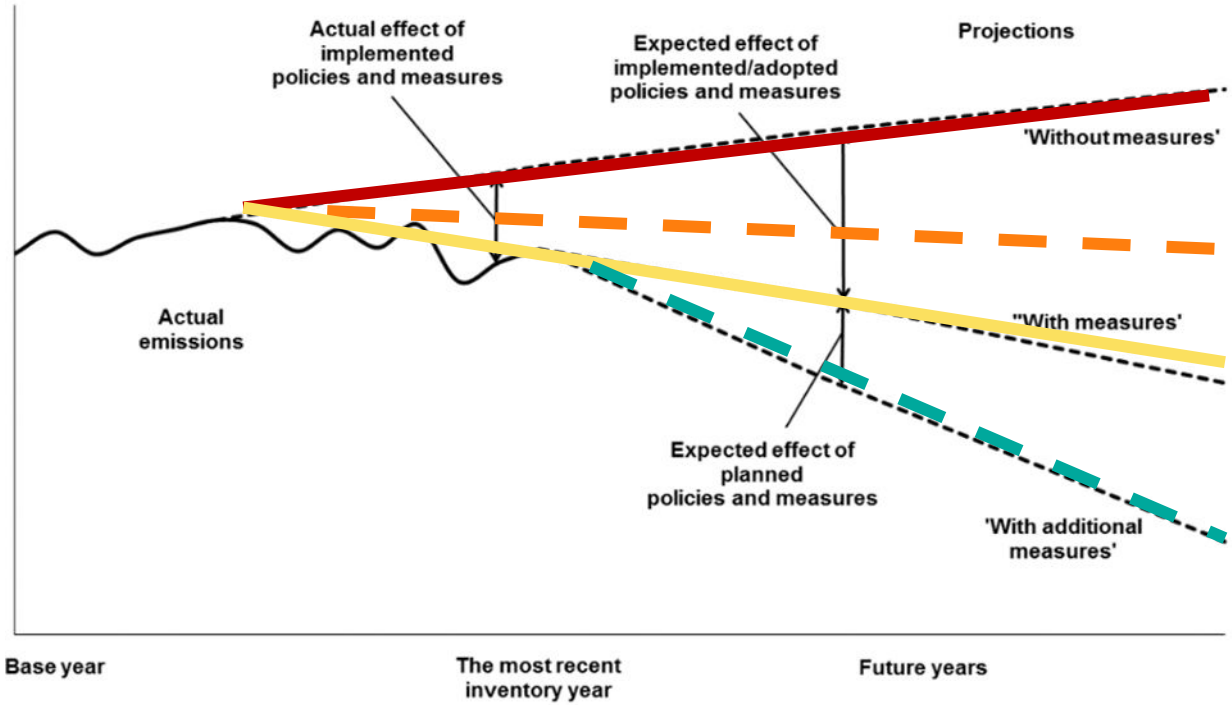
Scope:

- Develop an emission inventory for GHGs and air pollutants
- Compile and integrate recent data on air pollution and climate policies in modelling tools
- Explore further mitigation potential to reduce emissions and exposure
- Assess health impacts/benefits from exposure to ambient and household $PM_{2.5}$

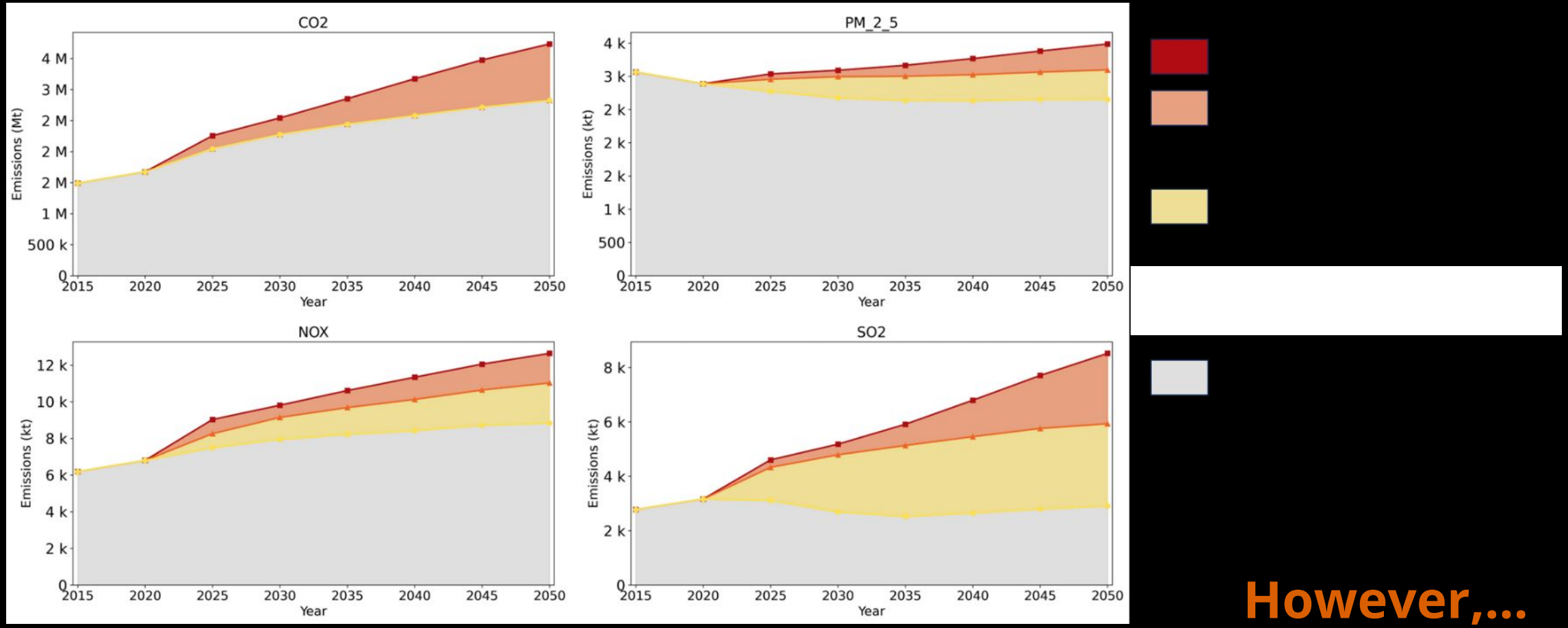
Analyzed scenarios

Modelling period 2015 to 2050



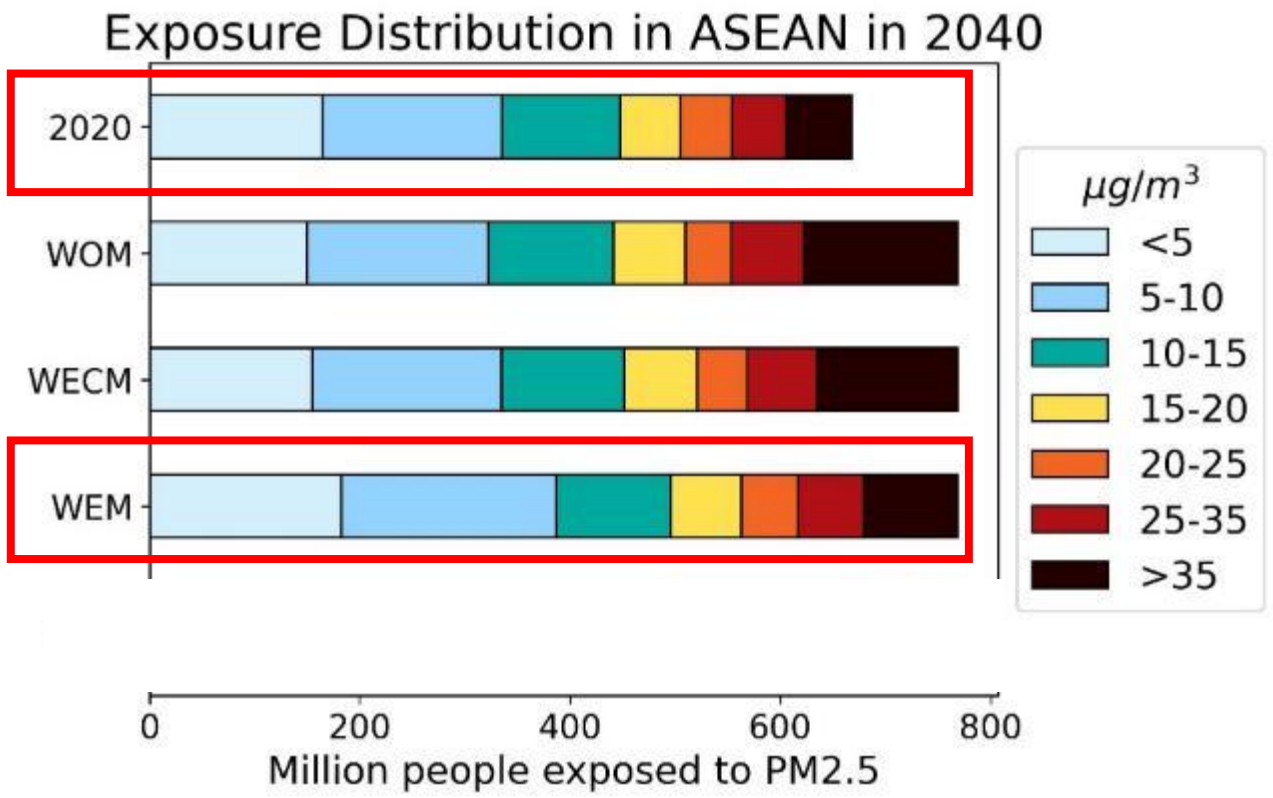
Scenario	Climate Policies	Air Pollution Policies
Without further Measures **(WOM)**	☒	☒
With Existing Climate Measures **(WECM)**	☑	☒
With Existing Measures **(WEM)**	☑	☑
With Additional Measures **(WAM)**	☑	☑☑☑

Policies introduced since 2015 deliver important emission reductions



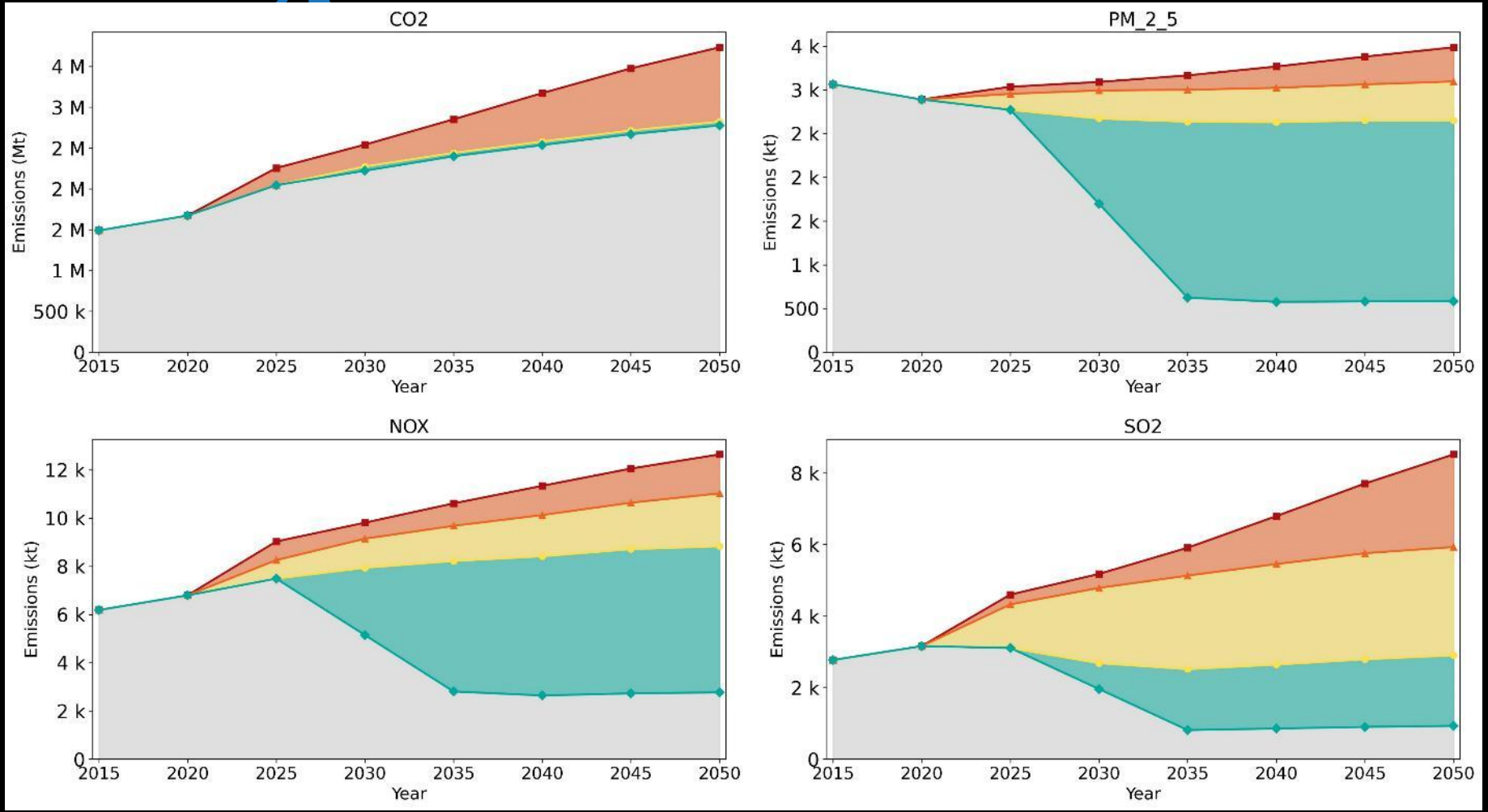
However,...

What is the expected change in PM $_{2.5}$ exposure distribution between now and 2040?

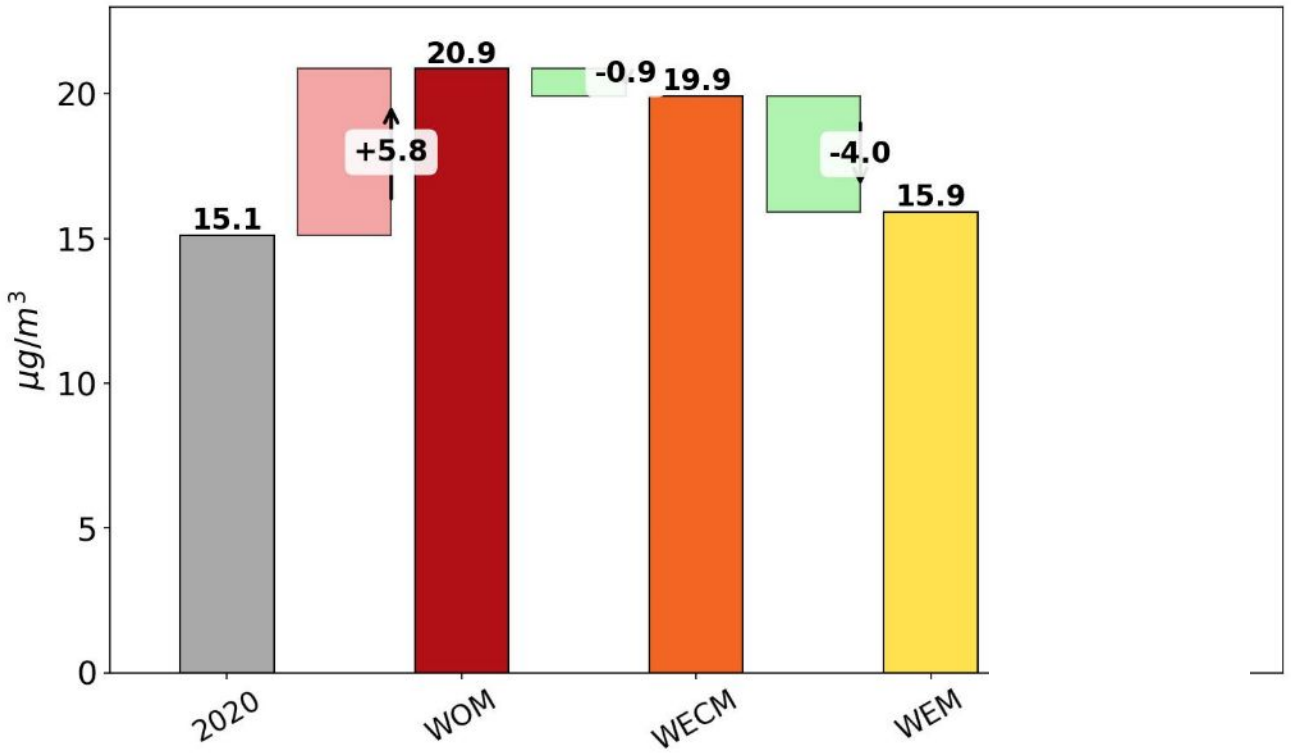


- Current policies (WEM), if effectively enforced, are not expected to bring significant relief of pollution burden
- In 2020 and 2040, only about a quarter of population is exposed to $PM_{2.5}$ levels below WHO Air Quality Guidelines (AQG of 5 ug/m^3), while nearly 10% remains above the level of 35 ug/m^3

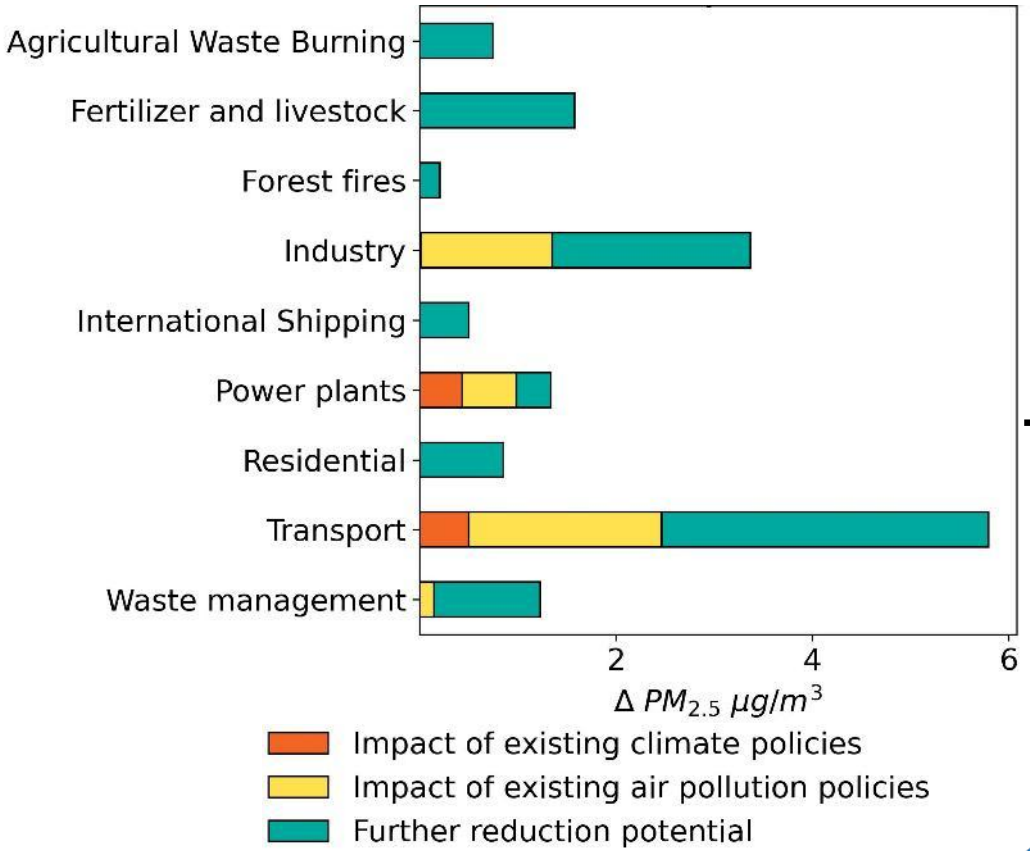
Significant further mitigation potential has been identified for key precursors of ambient $PM_{2.5}$*



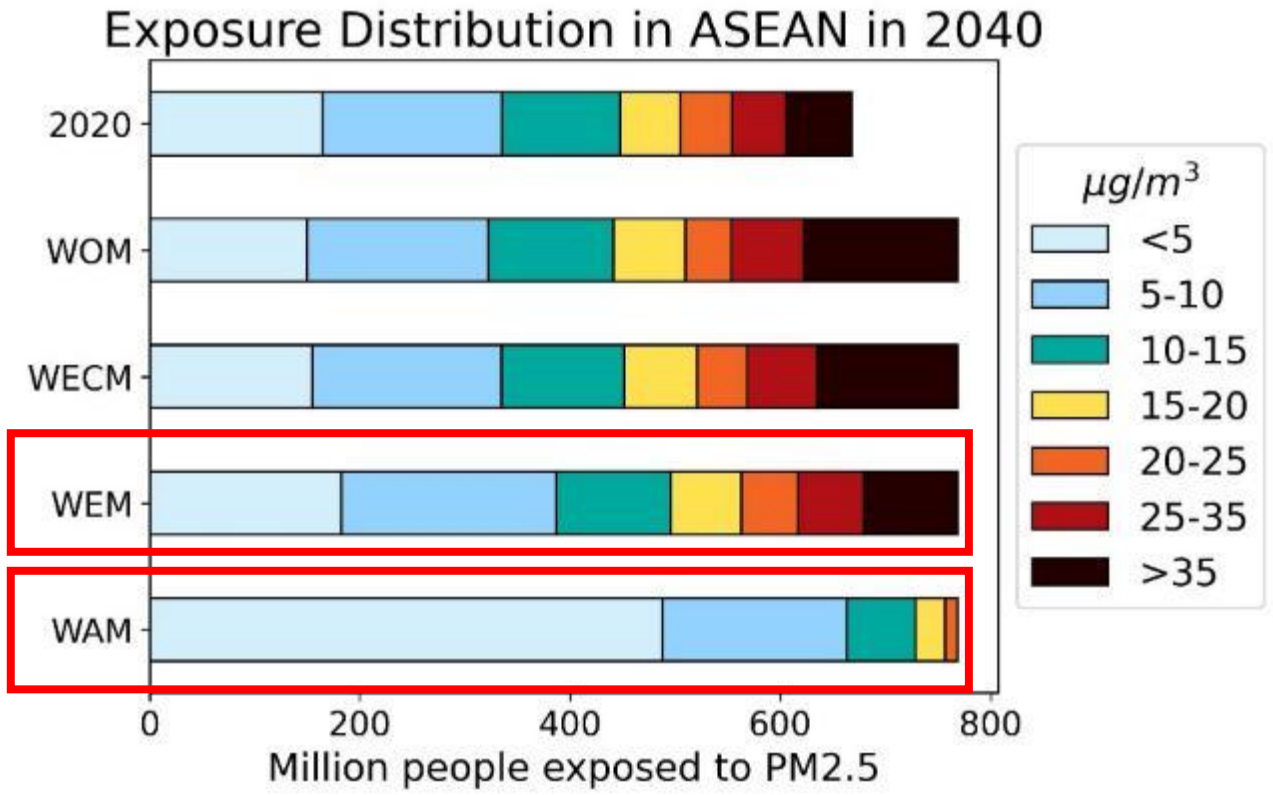
While current policies would prevent increase in pollution burden, there is significant further potential for $PM_{2.5}$ reductions



Further Maximum Reduction Potential (2040)



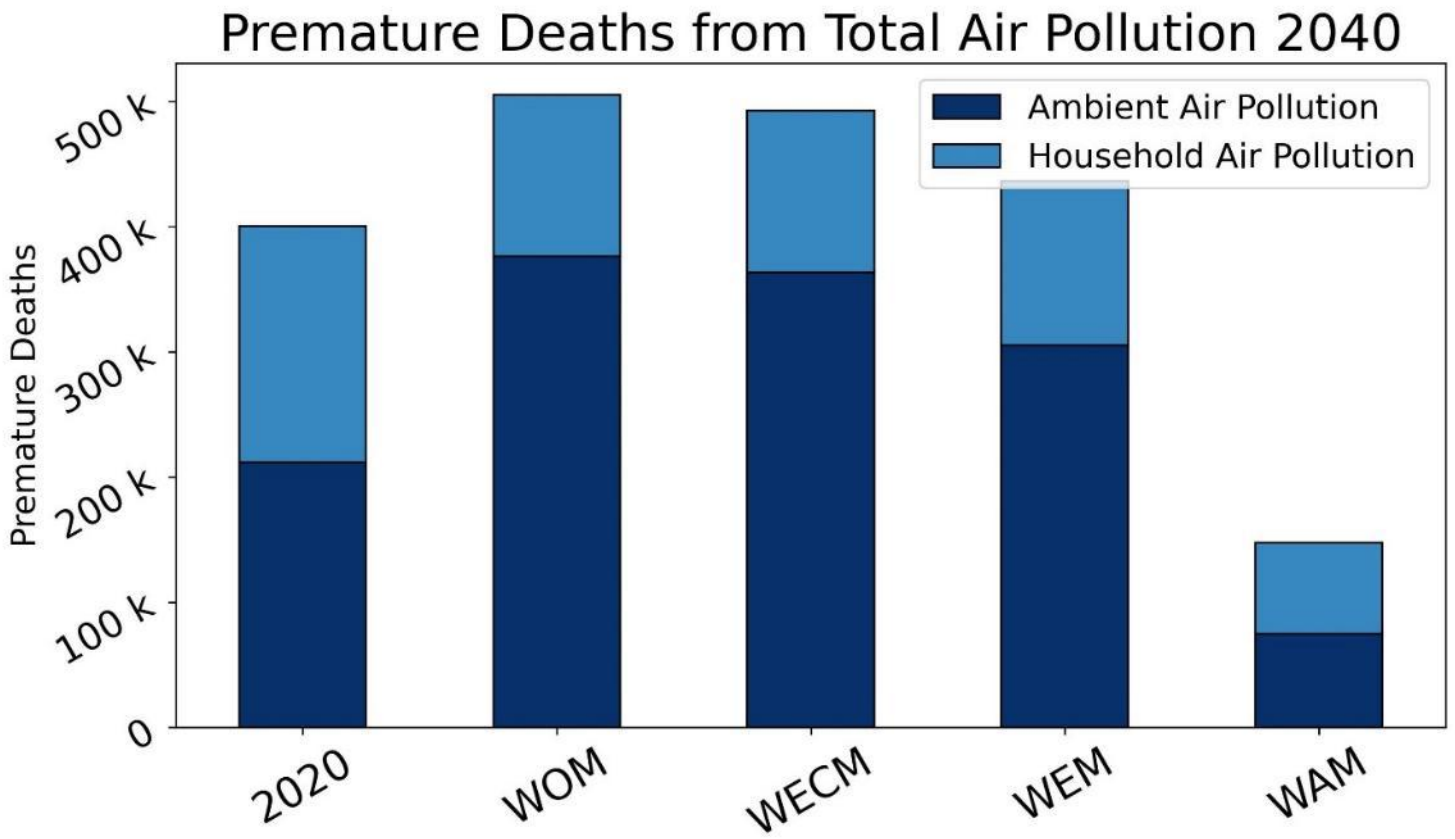
How could PM $_{2.5}$ exposure distribution change when full mitigation potential of technical measures was explored?



- Proven measures exist to reduce pollution burden and provide 'clean air' for nearly 2/3 of population
- Despite strong growth of urban population, more than 50% of urban dwellers would enjoy 'clean air' (compared to only 10% for current policy)

'Clean air ' – $PM_{2.5}$ exposure within the WHO AQG

Assessment of health impacts in the analyzed scenarios



Current policies (WEM) keep the overall burden at the level of 2020 but reduce more efficiently impact from indoor pollution

Exploring potential of available technology (WAM) could reduce death toll by over 2/3rd

Analysis of morbidity impacts is also possible

Policy recommendations

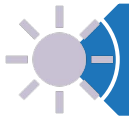
Ensure enforcement of current policies, including ag open burning

Build on positive experience and strengthen existing policies

Align development of air pollution policies, e.g., waste management, access to clean cooking fuels

Develop policies to address nitrogen losses in agriculture

AQM for cities – work also with neighboring jurisdictions



Improve integration of air pollution and climate policies

Strengthen regional collaboration to address transboundary pollution

Summary

- Without policies introduced since 2015, $PM_{2.5}$ levels in 2040 would increase by 33%, leading to an increase in premature mortality
- Effective implementation of current policies would keep $PM_{2.5}$ concentrations and exposure in the next decades at similar levels as in 2020,
- Further mitigation potential has been identified in several sectors, including transport, industry, agriculture, residential, waste.
- By 2040, additional measures could reduce premature deaths due to exposure to PM2.5 by >2/3 and provide air quality within WHO AQG to nearly 2/3 of population

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Thank you for listening!

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