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OPPORTUNITIES FOR LEADERSHIP ON SUPER POLLUTANTS AT COP30

1- SUPER POLLUTANTS AT THE INTERSECTION OF CLIMATE AND AIR QUALITY

Air pollution and climate change are deeply interconnected. Many sources of air pollutants—such as biomass burning, fossil fuel combustion in the transport, industry, and energy sectors—also emit **short-lived climate pollutants (SLCPs)**, or **super pollutants**, including **methane (CH_4)**, **tropospheric ozone (O_3 precursors)**, and **black carbon**.

Black carbon, for example, accelerates climate change by absorbing sunlight and darkening snow and ice, causing faster melting, and contributes to worsening air quality, with serious health impacts. Methane and tropospheric ozone are potent greenhouse gases with rapid warming potential, and tropospheric ozone is associated with half a million premature deaths per year.

Super pollutants are responsible for **approximately half of current global warming** (IPCC AR6, 2021). Reducing them can therefore deliver **rapid climate benefits**, while also **improving public health and air quality**.

2- SUPER POLLUTANTS AS AN "EMERGENCY BRAKE" ON CLIMATE CHANGE

Unlike CO_2, which persists in the atmosphere for centuries, **methane, black carbon**, and **tropospheric ozone** remain for weeks to a decade—meaning their reduction can yield **near-term climate benefits**.

According to the **Climate & Clean Air Coalition (CCAC)**, targeted action on super pollutants could **avoid 0.6°C of warming by midcentury**, while the **Global Methane Assessment** estimates that methane reduction alone could prevent **0.3°C of warming**. Cutting super pollutants, including tropospheric ozone, can mitigate warming **nearly four times faster than decarbonisation alone** (Dreyfus et al., 2022).

Targeting super pollutants **alongside CO_2 reductions** amplifies climate, health, and social benefits and generates **locally visible improvements in air quality**.

3– SOURCES OF SUPER POLLUTANTS AND PRIORITY ACTIONS FOR IMPROVEMENT

MAJOR SOURCES OF SUPER POLLUTANTS INCLUDE:

- Methane: agriculture (livestock, rice paddies), fossil fuel production and use, landfills, wastewater treatment
- Black carbon: diesel transport, residential biomass burning, industrial emissions, forest fire
- Tropospheric ozone precursors: vehicle emissions and biomass burning

PRIORITY ACTIONS TO REDUCE EMISSIONS:

Integrated approaches to air quality management and climate change mitigation, including in monitoring, policymaking and reporting.

- Shift to **electric or low-emission transportation**, and eliminate high-emitting vehicles.
- **Curb deforestation** and prevent forest fires using regulation through fines and permits, or community-based approaches to forest fire management.
- Replace traditional biomass or kerosene stoves with **clean cooking technologies**, and transition to clean heating and lighting - including in commercial and institutional settings.

These measures address both **climate and air quality goals,** delivering **rapid and tangible co-benefits.**

4– BENEFITS OF SUPER POLLUTANTS REDUCTION FOR HEALTH, ECONOMY, AND EQUITY

Reducing super pollutants improves climate, health, and economic outcomes simultaneously:

HEALTH BENEFITS:

- Black carbon, as a component of fine particulate matter (PM2.5), contributes to over **8 million premature deaths annually** (Clean Air Fund, 2024).
- Tropospheric ozone is associated with **~500,000 premature deaths per year**.
- Exposure to these pollutants causes cardiovascular and respiratory diseases, high blood pressure, adverse birth outcomes, and heatwave mortality.

ECONOMIC IMPACTS:

- Black carbon contributes to **$8 trillion in economic costs** from air pollution annually, disproportionately affecting low-income households and workers.
- Tropospheric ozone incurs **~$500 billion in economic costs annually**, including healthcare and lost productivity.
- Avoided healthcare costs, fewer productivity losses, and reduced agricultural damage can outweigh pollution control investments.

EQUITY EFFECTS:

- Low-income and marginalised communities often face higher exposure due to proximity to industrial sites and congested roads. Protecting these populations enhances **public health, social equity, and economic resilience**.

5– INTEGRATING SUPER POLLUTANTS INTO CLIMATE POLICY

Despite strong evidence on their severe impacts, the reduction of super pollutants remain:

- **Underrepresented** in UNFCCC negotiations and NDCs (for instance, currently only 18 countries have black carbon in their NDCs).
- **Underfinanced**: receiving only 2.6% of international public climate finance (2018–2022) targeted outdoor air pollution, with black carbon receiving just 0.1% - around US$3.6 million/year (Clean Air Fund, 2025)

Implementing and scaling up initiatives for super pollutant mitigation is essential to realise **climate, health, and air quality co-benefits globally.**

6– INTERNATIONAL LEADERSHIP AND COP MOMENTUM

High-level summits at COP28 (Dubai, 2023) and COP29 (Baku, 2024) advanced the super pollutant agenda, alongside the **Global Methane Pledge** launched at COP26 (Glasgow, 2021). Over 150 countries have committed to **reducing methane emissions by at least 30% by 2030**, with increasing alignment between climate and air quality goals.

The **Brazil**, the **UK**, and **China** are well placed to host a high-level Super Pollutants Summit at COP30, as leaders in global super pollutant reduction efforts (the UK and Brazil as co-chairs of the Climate and Clean Air Coalition, the leading inter-governmental body addressing super pollutants, and China as a co-host of related Summits at the two previous COPs). At a Summit, representatives could highlight the unique 'emergency brake' potential of super pollutants and highlight new steps including in NDC ambition, regulatory steps, and new funding flows.

Integrating super pollutants into COP30 in Belém presents Brazil with a unique opportunity to:

- Elevate super pollutants and air quality within **NDCs and climate finance mechanisms.**
- Highlight the opportunity that fast action on super pollutants – alongside decarbonisation – brings to rapidly reduce global warming
- Align **environmental, health, and development goals**, ensuring the benefits of clean air are **accessible to all communities.**

Brazil's leadership could catalyse global action, demonstrating the power of addressing super pollutants for **climate, health, economic, and social co-benefits.**

Take a look at the following reports with more information about the impacts of black carbon and tropospheric ozone on climate, environment, health and the economy:

THE CASE FOR ACTION ON BLACK CARBON

THE CASE FOR ACTION ON TROPOSPHERIC OZONE

ABOUT THE CLEAN AIR FUND & CEBRI COLLABORATION

Clean Air Fund and CEBRI are collaborating to raise awareness of the importance of integrating air pollution into climate discussions at COPs and beyond. The aim is to highlight the impacts of super pollutants on human health, the environment, and the economy, and to discuss ways to tackle the issue.

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