Clean Air Catalyst

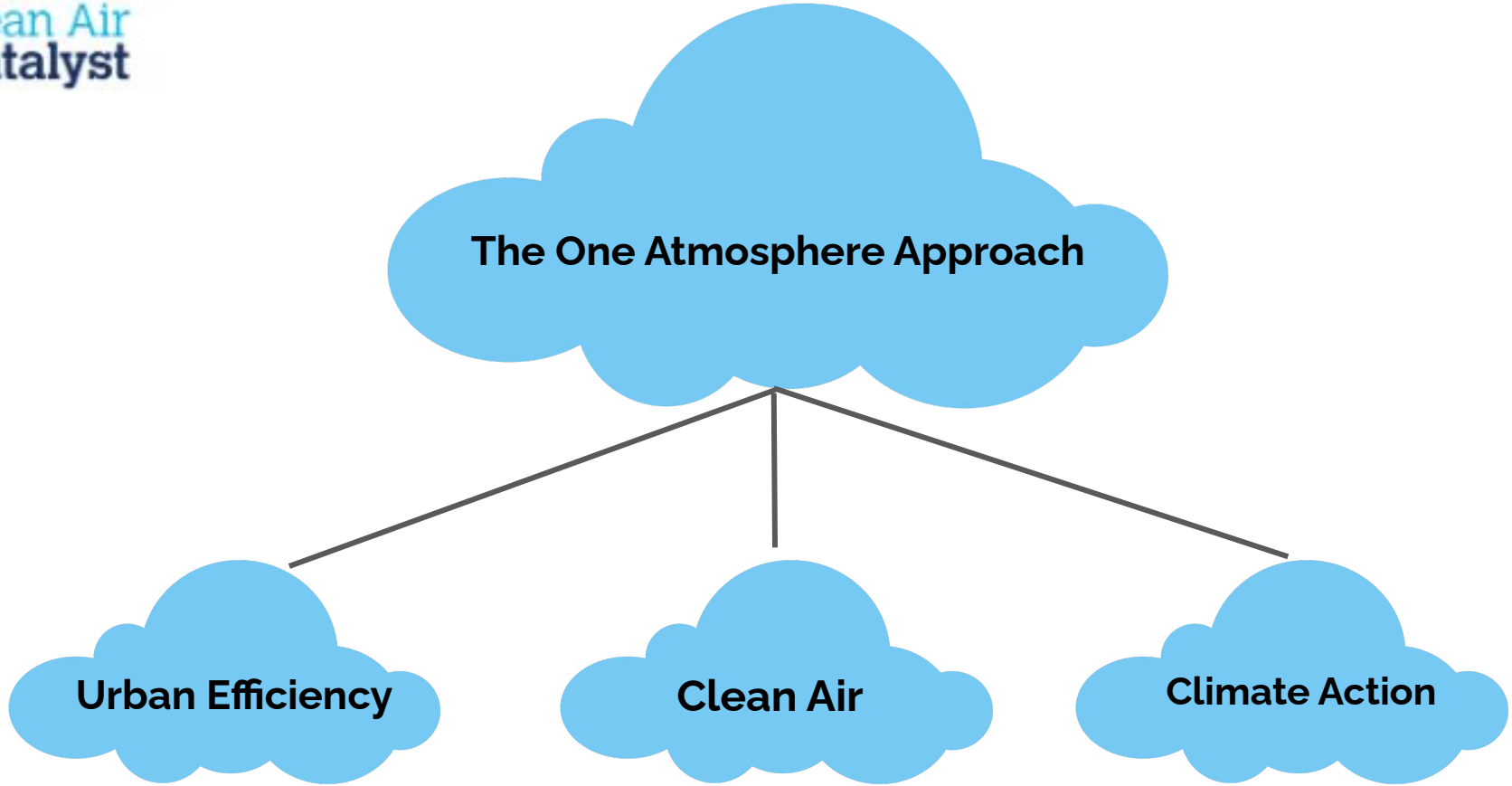
One Atmosphere Solutions

Pathways for integrated clean air and climate action planning

Nairobi Emissions Inventory Training Workshop
Nairobi, January 9th, 2023

For CAC Climate: Abhinand Krishnashankar, Senior Analyst

Clean Air Catalyst



Integrating considerations of equity, culture, and nature

Clean Air Catalyst

What are one atmosphere solutions?

- Solutions that simultaneously reduce short-lived climate pollutant and greenhouse gas emissions, and air pollutant emissions from key urban sectoral activities informed by science and stakeholder input

- Clean air solutions that are integrated with existing climate mitigation and adaptation actions, policies, and investments in order to maximize the climate co-benefits of improving air quality at the subnational and city-level

Clean Air Catalyst

Why one atmosphere solutions?

- Climate change and air pollution share **common sources** emitting primary air pollutants, short-lived climate pollutants, and greenhouse gases.
- Activities causing climate and air pollutants lead to **impacts on the human health** in the form of premature loss of life, onset and exacerbation of chronic and respiratory illnesses, and other diseases.
- Addressing climate change and air pollution can **reduce impacts on those most vulnerable** to climate and air pollutant exposure.
- Measures taken to reduce air pollution can **slow down climate change** and measures taken to slow down climate change can similarly result in **cleaner air for all**.

Clean Air Catalyst

PROGRAM STRATEGY

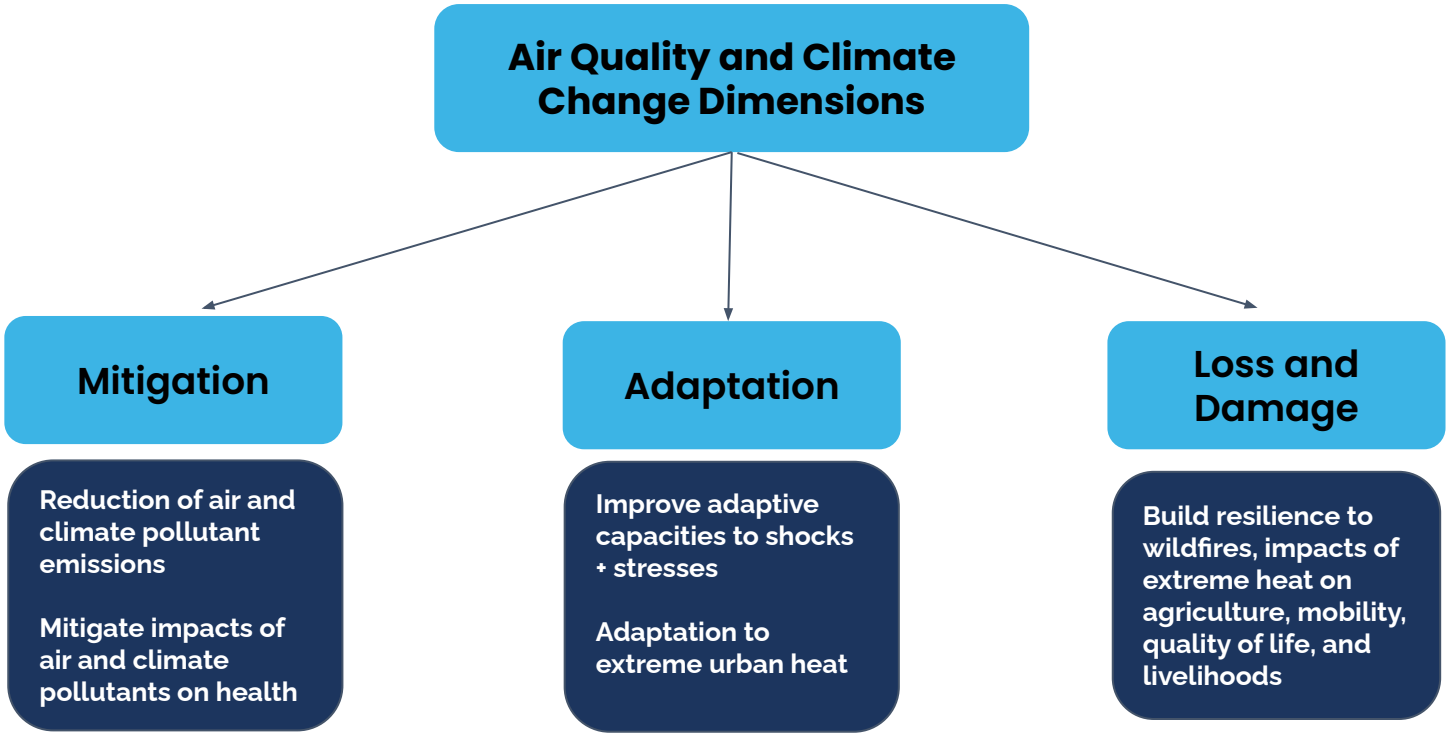
Climate

Prioritize pollutant sources that contribute to short-lived climate pollutants and greenhouse gas emissions

- Communicating the “double win” of addressing air pollution and climate change simultaneously
- Building in provisions to maximize climate co-benefits of the air quality interventions during the project and afterwards
- Integrating insights from sector-wise GHG and SLCP datasets into one atmosphere solutions at the intersection of clean air and climate action planning

Clean Air Catalyst

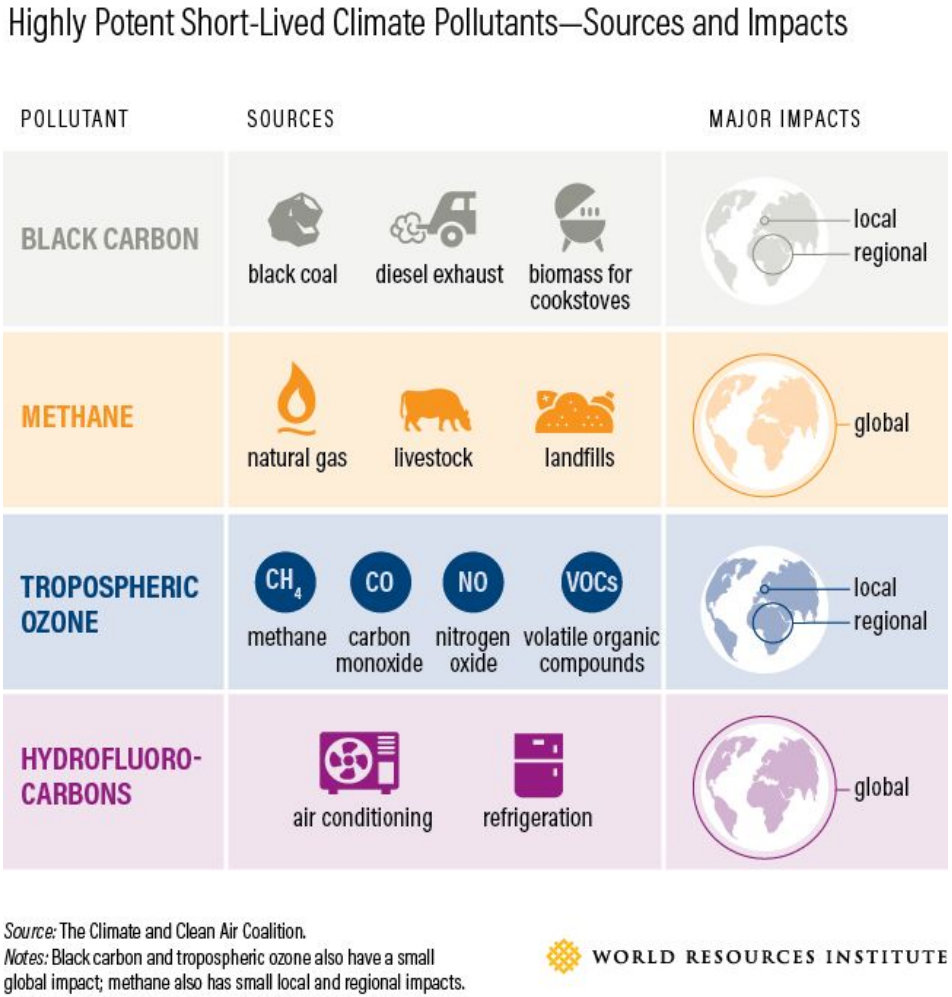
Climate- Air Quality Linkages



Clean Air Catalyst

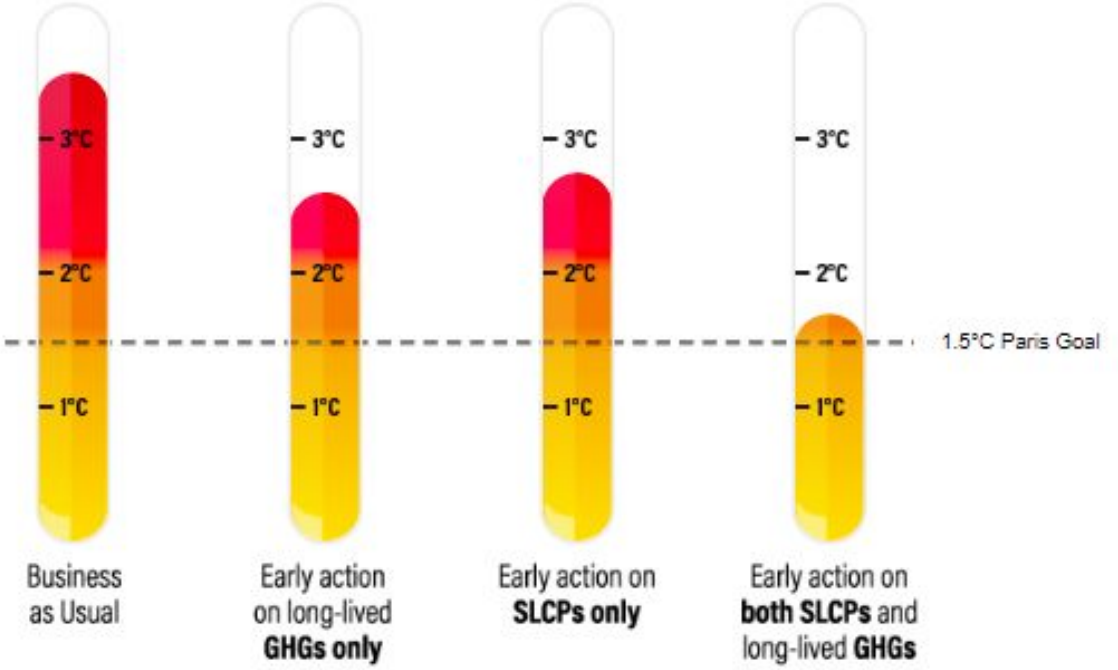
Short-Lived Climate Pollutants:

The Missing Piece in the Climate Action Effort



Clean Air Catalyst

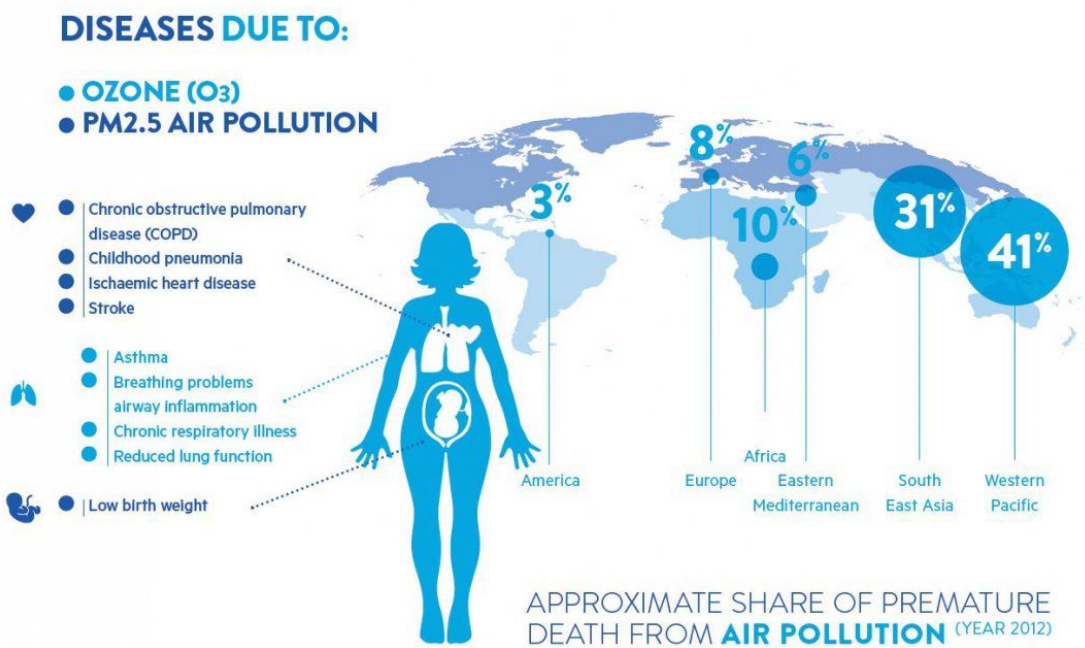
We need to reduce GHGs and SLCPs to meet the Paris Agreement's 1.5 C target.



Source: Shindell et al. (2017); CCAC (2017)

Clean Air Catalyst

Reducing SLCP emissions also leads to healthy lives.



Source: Climate and Clean Air Coalition

Clean Air Catalyst

Black Carbon

- Black carbon particles contain known toxic constituents such as carcinogens and are co-emitted with other toxic pollutants.
- Actions to reduce BC emissions must complement PM reduction strategies.
- By 2040, in Nairobi's transportation sector alone, the absence of mitigating measures, will lead to the increase of BC emissions by over **4 times** the estimated volume in 2020.
- In order to set SMART BC emission reduction targets for focus sectors, key data gaps need to be addressed.

Clean Air Catalyst

Methane

- Perhaps the more well-known among other SLCPs, methane is second to CO2, a greenhouse gas, in its proportional contribution to global warming.

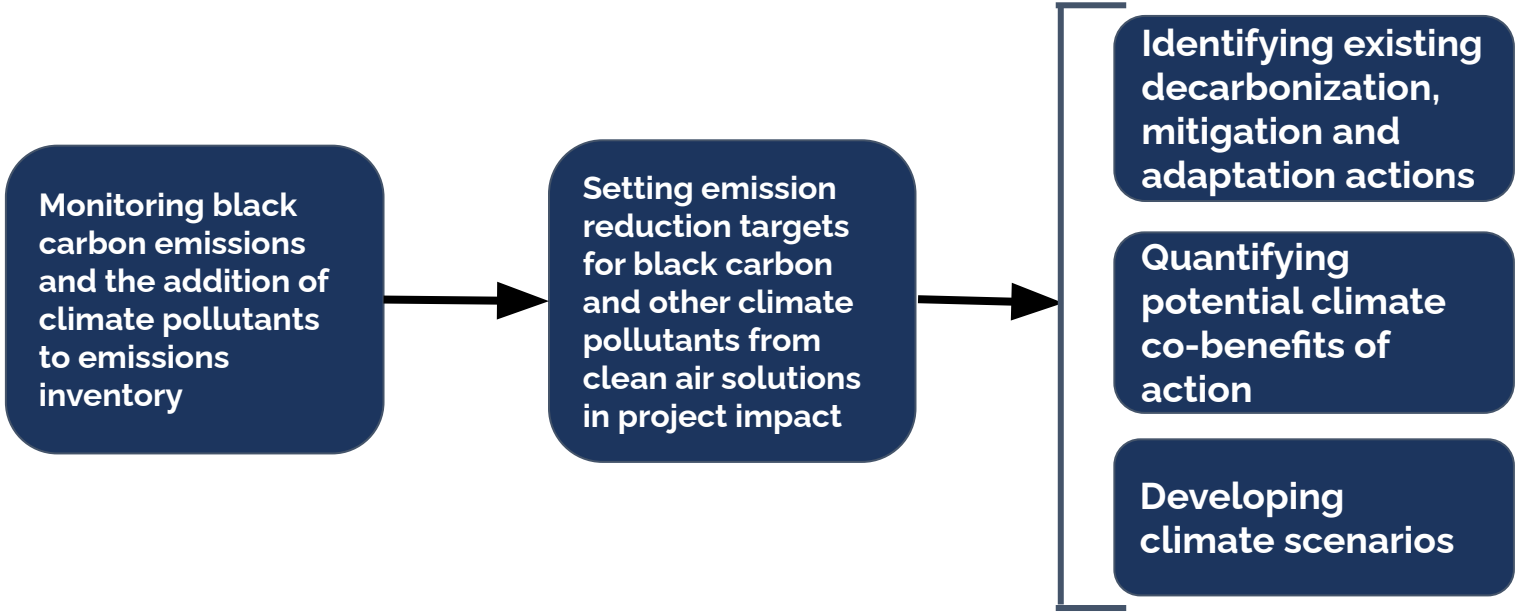
- Reducing anthropogenic methane emissions by 45% by 2030 will lead to:
  - Kenya meeting its Nationally Determined Contributions well ahead of time
  - Reducing average surface warming in Kenya by 0.02 C
  - An average cost-benefit ratio of 1:6 for the entire African continent

  Source: Global Tool for the Assessment of Methane Reduction Benefits

- There are challenges in targeted reductions posed by lack of granular data on source contributions.

Clean Air Catalyst

CAC Pathway to One Atmosphere Solutions

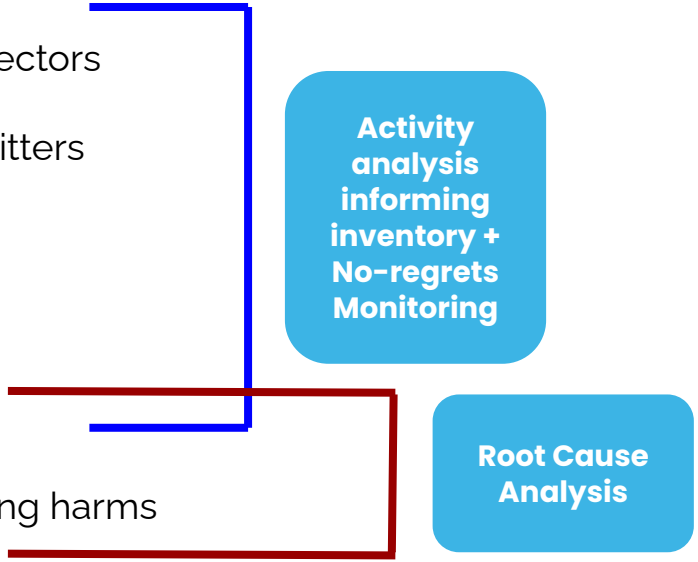


Sectoral Engagement and Coalition Building

Clean Air Catalyst

Why look at emissions landscape?

- **WHAT** volume, magnitude, sectors
- **WHEN** peak-time values, emitters
- **WHERE** within city, county
- **WHO** emits, is impacted
- **WHY** persistent emissions
- **HOW** to address while avoiding harms



Clean Air Catalyst

How tools can enable action?

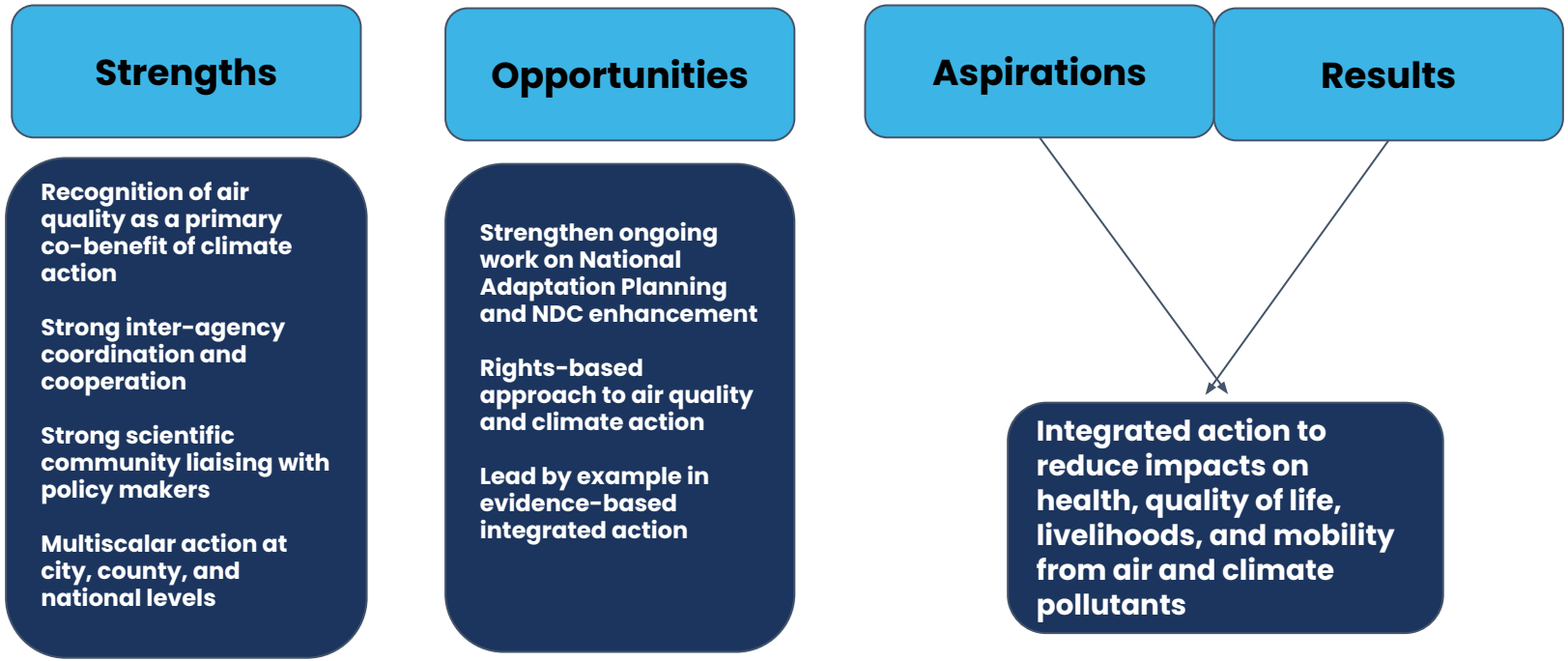
- Inform implementation of activities outlined in city/county level action plans
- Enhance targets for emission reductions outlined in guiding frameworks for action such as Nationally Determined Contributions

- Inclusion of BC and CH4 emission reduction targets in updated NDCs of Ghana, Chile, Colombia informed by deepened understanding of emissions landscape

- Enhance buy-in from broad set of stakeholders for integrated action

- Creation of knowledge resources, or dissemination of existing resources by Catalyst partner, CCAC, on the significance and enablers of integrated action

- Facilitate joint action by government departments, and coordinate efforts of knowledge and technical partners

Clean Air Catalyst

Ready to SOAR in integrated effort