

Clean Air Catalyst

**A Global Partnership for Accelerating
Clean Air Solutions**

**Better Air Quality Conference 2023
Manila, Philippines**

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Strategies**

About Clean Air Catalyst

Program Overview

The Clean Air Catalyst (Catalyst) is a five-year flagship program launched by USAID in 2020 to accelerate clean air solutions in Jakarta, Indonesia; Indore, India; and Nairobi, Kenya. In Jakarta, Catalyst is led by World Resources Institute (WRI) Indonesia. We aim to advance locally tailored, self-reliant solutions for clean air, climate and improved human health in cities.

01

Increase effective demand for action to reduce pollution from locally relevant sources through **“Source Awareness”**

02

Identifying root causes of emissions through a “Root Cause and Disruptability Analysis” approach and co-designing **“Solutions”**

03

Advance clean air actions by building **“Strategic Coalitions”**

Achieve Jakarta's goal to reduce emissions and air pollution, aiming to enhance public health and quality of life due to air quality improvements.

PROGRAM PARTNERS



WRI INDONESIA



COLUMBIA CLIMATE SCHOOL
Clean Air Toolbox for Cities



CLIMATE & CLEAN AIR COALITION
TO REDUCE EMISSIONS AND IMPROVE AIR QUALITY



Internews



A Global Partnership for
Accelerating Clean Air Solutions

Catalyst's Source Awareness to Enhance Sources of Pollution Understanding

Source Awareness

The Catalyst in Jakarta support Jakarta Environment Agency (DLH) to undertake air quality monitoring activities as data-driven focus on enhancing sources of air pollution understanding.

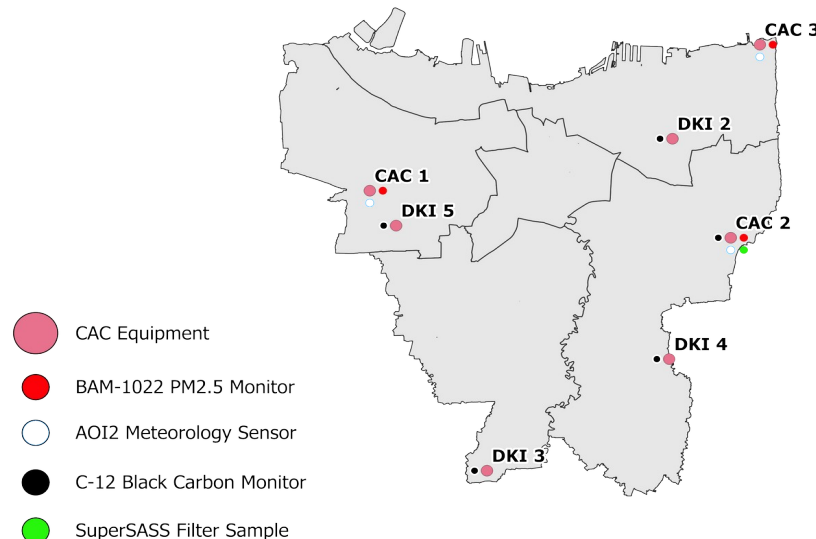
Black Carbon



PM2.5 and Meteorology



Stationary AQ Monitoring Location



Measurement Objectives:

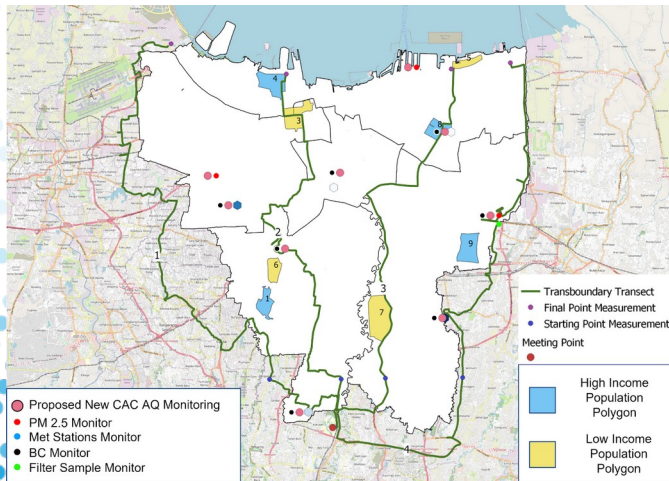
1. To enhance source awareness about key sources in Jakarta
2. To identify high-risk areas due to exposure to air pollution in Jakarta.
3. To identify the connection between climate change and air pollution in Jakarta through black carbon monitoring.
4. To identify the relationship between air quality and meteorological condition, especially wind direction to analyze air pollutants from specific direction, including its from surrounding cities of

Catalyst's Source Awareness to Enhance Sources of Pollution Understanding

Source Awareness

In partnership with Google Earth Outreach and Aclima, mobile monitoring was conducted to measure PM2.5 as well as gaseous pollutants in different neighborhoods (polygons) differentiated by high-income vs low-income; and transect to estimate the effect of transboundary air pollution into Jakarta.

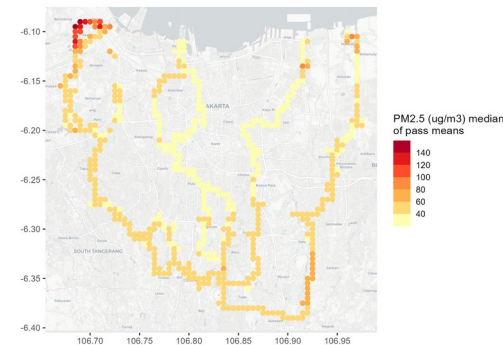
Mobile Monitoring



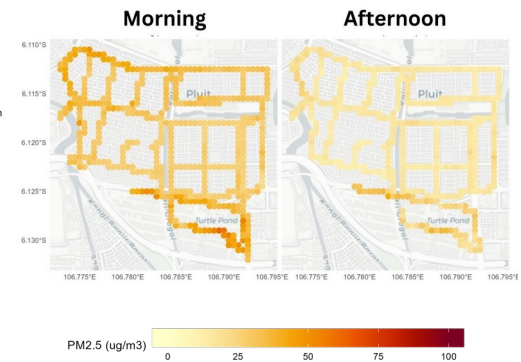
The polygons were designed using socio-economic indicators, such as GDP per capita and house size, as proxies.

Four transect routes were designed to characterize air pollutant concentrations in the border areas to the east and west of Jakarta, and the inner part of Jakarta.

Preliminary Results PM2.5



Preliminary Results PM2.5



The variability in PM2.5 appeared to be primarily influenced by the potential local sources of pollution. Future works should further investigate the influence of local pollution sources by incorporating additional data sources such as traffic data and emission inventories. This investigation will be carried out as part of the CAC's activities.

Catalyst's Source Awareness to Enhance Sources of Pollution Understanding

Source Awareness

Some researches to expand sources awareness:

- Emission Inventory:** to estimate baseline emission load of PM2.5, PM10, NOx, SO2, Black Carbon, CO, and GHG (CO2eq) from land transportation in Jakarta. Preliminary result has been presented, full report is targeted to be completed by April 2024
- Source Apportionment:** to identify the contribution of local sources and characteristics of particulate using a filter sampler in Jakarta, with a target completion date of December 2024

Emission Inventory

Sector	% contribution											
	SO ₂		NO _x		CO		PM _{2.5}			PM ₁₀		BC
	A	B	A	B	A	B	A	B	C	A	A	B
Energy Industry	25.17	24	11.54	24	1.76	2	5.69	9	n/a	7.49	2.61	9
Manufacturing	61.96	67	11.49	15	1.25	4	26.81	43	28	33.9	13.31	8
Transportation	11.58	3	72.40	57	96.36	93	67.03	46	46	57.99	84.04	75
Commercial	0.33	NA	0.30	NA	0.03	NA	0.04	NA	5	0.08	0.02	NA
Residential	0.96	6	4.27	4	0.59	1	0.43	2	17	0.54	0.02	8
Biomass burning	NA	NA	NA	NA	NA	NA	NA	NA	5	NA	NA	NA
Construction	NA	NA	NA	NA	NA	NA	NA	NA	1	NA	NA	NA
Road dust	NA	NA	NA	NA	NA	NA	NA	NA	2.5	NA	NA	NA

Source(A) Amri et al., (2020); (B) Lestari et al., (2020); (C) BreatheEasy, 2017.

CAC will update its emission inventory to focus on the transportation sector. The estimation will be conducted for the baseline year, in which 2019 (before the pandemic) activity data will be used. We've collected vehicle-kilometers travelled (VKT) data for various vehicle types and are currently performing top-down calculations based on energy consumption.

Source Apportionment



Filter sampler (SuperSASS) installed in East Jakarta Mayor's Office will collect samples over a 24-hour period during wet and dry seasons in 2023.

Data collection was started on October 15th and will follow US EPA sampling schedule for 2023

Shortlisted Solutions: Low Emission Zone and HDV Emission Reduction

Solutions Co-Designing

Throughout the process, source prioritization has been conducted, **transportation** has been identified as an important source influencing air quality in Jakarta.

Understand root causes of polluting emission



Develop long list of potential solutions



Prioritize short list of solutions



Perform detailed scenarios of impacts, costs and co-benefits for short list

We are here!

Build coalitions solution for one intervention:
share analysis of other solutions



Action toward electrification of government vehicle fleets



Action toward accelerating bus electrification for Jakarta



Action toward reducing car use/increasing the targets for public transport mode shift to 60% by 2025



Action to advance equitable low-emission zones



Action to reduce emissions from HDV fleet

Consideration

1. Political Feasibility
2. Impact on improving Air Quality
3. Cross-Sectoral co-benefits including health and gender

Shortlisted Solutions

Next step on Shortlisted Solutions: Coalition Building to Push Forward Solution

CAC will select a high-impact solution, form a diverse coalition of partners, and integrate emissions reduction solutions into governance and policy through shared narratives, joint investments, and coordination mechanisms.

1. Collecting feedback from impacted populations and stakeholders whose working on transport sector
2. Event Activation and Policy Advocacy for pushing forward the solutions



THANK YOU