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USAID Air Quality Overview
Air Quality in Africa Workshop

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USAID Air Quality Overview

We believe air pollution is a global health, environmental, and an international development issue:

- **Global health**: <u>Air pollution causes 6.7 million deaths each year.</u>

- **Environmental:** The 2018 IPCC Special Report on 1.5°C states that achieving the Paris Climate Agreement *requires* reducing air pollution classified as Short Lived Climate Pollutants (SLCPs).

- **International Development:** Air pollution impedes progress on 15 of the 17 Sustainable Development Goals and also causes major economic losses. For instance, <u>air pollution costs South Africa USD 29.1 billion or 4.5% of South Africa's 2012 GDP</u>.

Climate Change and Air Pollution

- **Reducing air pollution advances climate mitigation**: The main emission sources for toxic air pollutants and greenhouse gases (GHGs) are combustion processes (heating, electricity generation etc), transport, agriculture, and wildfires.

- **Demand for clean air is driving political action on climate**: Public concern over the health impacts of air pollution is increasingly driving policy action on climate change in developing nations (e.g., China, India, etc.). LMIC policymakers want joint air pollution control and GHG emission strategies.

- **Climate change can worsen urban air quality:** Weather has a major influence on the dispersal and ambient concentrations of air pollutants.

To reach the Paris Agreement goal requires rapid reduction in CO2 emissions AND deep reductions in air pollutants like methane and black carbon to limit global warming to 1.5 degrees (or 2 degrees) Celsius.

USAID Approach to Air Pollution programming

Opportunity to scale up

Goal: USAID's air quality programming aims to mitigate and reduce ambient and household air pollution to reduce adverse health impacts, advance climate change mitigation and adaptation, and promote inclusive, sustainable development.

Going Forward:
- Build internal USAID awareness, interest and capacity
- Strengthen connections across development priorities (human health, GCC)
- Build upon/scale up current and new USAID AQ efforts
- Demonstrate global leadership in elevating clean air as a development priority
- Support countries to implement joint air pollution-climate strategies
- Do the work above in a manner that supports, engages, and puts at its center diverse local leadership and expertise.

Current Programs

Small but growing portfolio of programs with air quality components across USAID (Ethiopia, India, Indonesia, Kenya, Nepal, South Africa, Thailand, Vietnam, and Hindu Kush Himalaya)

JPL/MAIA (through NASA IAA)
- Integration of satellite, surface monitor, and model data to map PM exposure where surface monitors are sparse, pollution levels are high, and health effects have not been well studied.
- Support development of next generation technology that will significantly move forward the science of using satellite data to capture concentrations and classes of PM
- USAID's assistance is specifically to fill gap in the ground sensor networks in Ethiopia and South Africa - where ground sensor networks were least developed and funding most needed

Current Programs

Clean Air Catalyst - global consortium of 8 organizations with expertise in air quality, environment, public health, energy, and governance

- 3 pilot cities
- Improve Source Awareness, Root Cause Analysis to ID most effective action, Build Strategic Coalition
- Success = sustainable clean air actions implemented, leading to reduced air pollution for improved health and climate mitigation.

Current Programs

SERVIR Hindu Kush Himalaya, ICIMOD:
- SERVIR AST: expand air quality efforts through modeling and satellite data use
- ICIMOD working with govt. of Nepal & Bhutan to establish AQ monitoring stations
- High Mountain Asia (HMA) AQ Project
- Atmospheric Watch Program

SERVIR Mekong, ADPC:
- AQ Monitoring & Forecasting tool co-developed with Thai
- Pollution Control Dept (PCD) & Thai Space Agency GISTDA.
- PCD, SERVIR-Mekong and GISDTA co-organized Smogathon Thailand 2020, bringing public attention to AQ

U.S. Consul General Sean O'Neill awards prize to Smogathon winners, 2020

Central America - El Salvador:
- El Salvador's Ministry of Environment and Natural Resources continues to use and build upon AQ models (CMAQ forecasts & satellite data) originally developed in 2011 by SERVIR Applied Sciences Team PI, Amy Huff

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