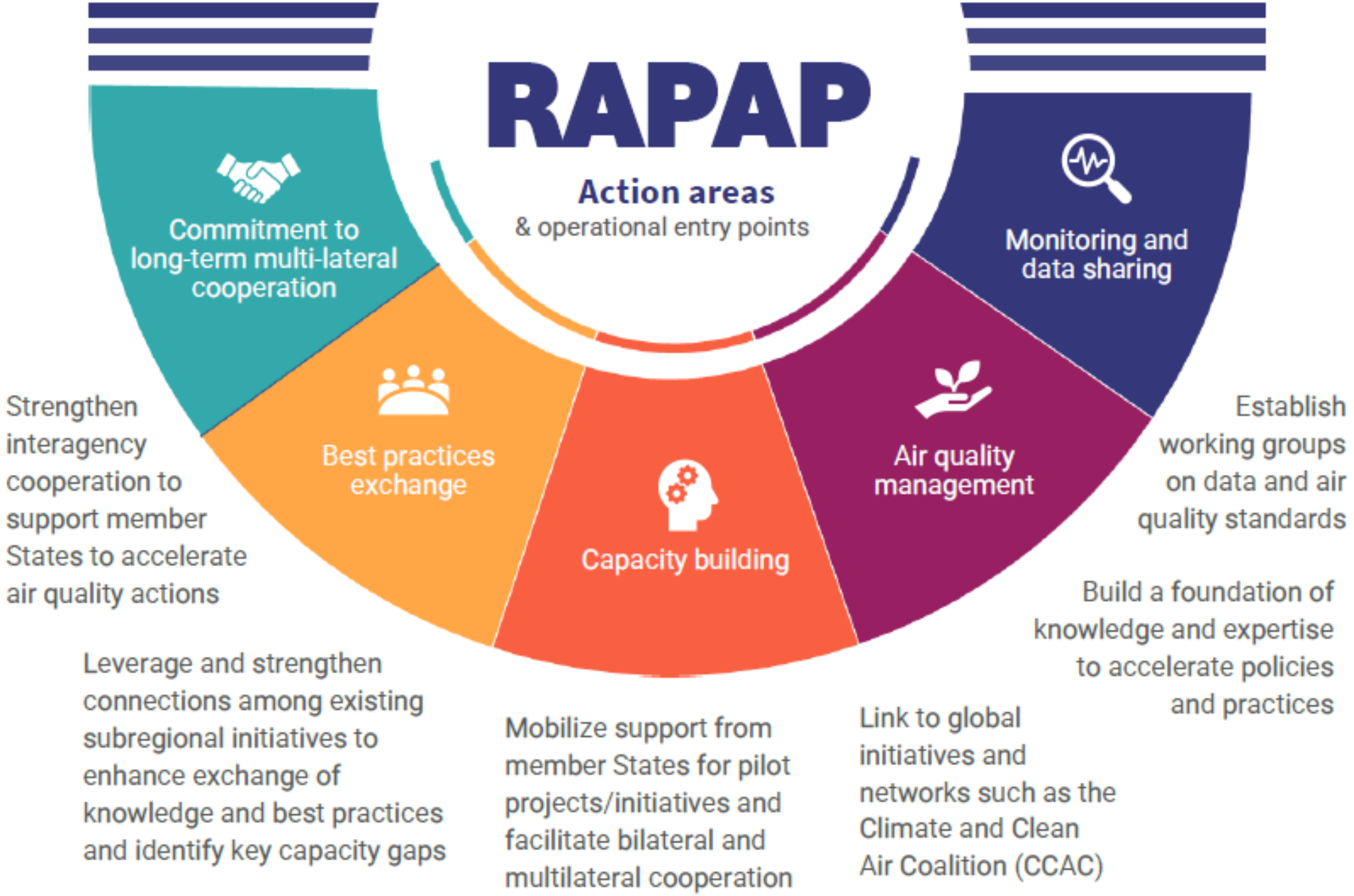
Air Pollution in Cambodian Cities: an Airsheds Approach

Strengthening Regional Cooperation To Tackle Air Pollution Challenges In Asia And The Pacific



UNITED NATIONS
ESCAP
Economic and Social Commission for Asia and the Pacific

Image credit: V.T. Polywod


RAPAP
Action areas
& operational entry points
Commitment to long-term multi-lateral cooperation
Best practices exchange
Capacity building
Air quality management
Monitoring and data sharing
Strengthen interagency cooperation to support member States to accelerate air quality actions
Leverage and strengthen connections among existing subregional initiatives to enhance exchange of knowledge and best practices and identify key capacity gaps
Mobilize support from member States for pilot projects/initiatives and facilitate bilateral and multilateral cooperation
Link to global initiatives and networks such as the Climate and Clean Air Coalition (CCAC)
Build a foundation of knowledge and expertise to accelerate policies and practices
Establish working groups on data and air quality standards

Air Pollution Projects

Operationalizing the Regional Action Programme on Air Pollution

Building a Partnership and Coordination Platform for the Regional Action Programme on Air Pollution (RAPAP)

Regional Approaches to Reduce Pollution in Transboundary Airsheds

Building the Pan-Asia Partnership for Geospatial Air Pollution information

Project Context

The Asia-Pacific region is **rapidly urbanising** and will become mostly urban in the next decades.

This rapid urban expansion increases:

- Increases infrastructure development and energy consumption
- Raises demands for fossil fuel in the transport sector
- Adds to household pollution from cooking and heating/cooling
- Gives room for improper waste management

All of which unavoidably contribute to the region's worsening air pollution….



Project Goals

Government agencies in target countries have access to and utilize space applications to monitor and introduce measures to improve air quality.

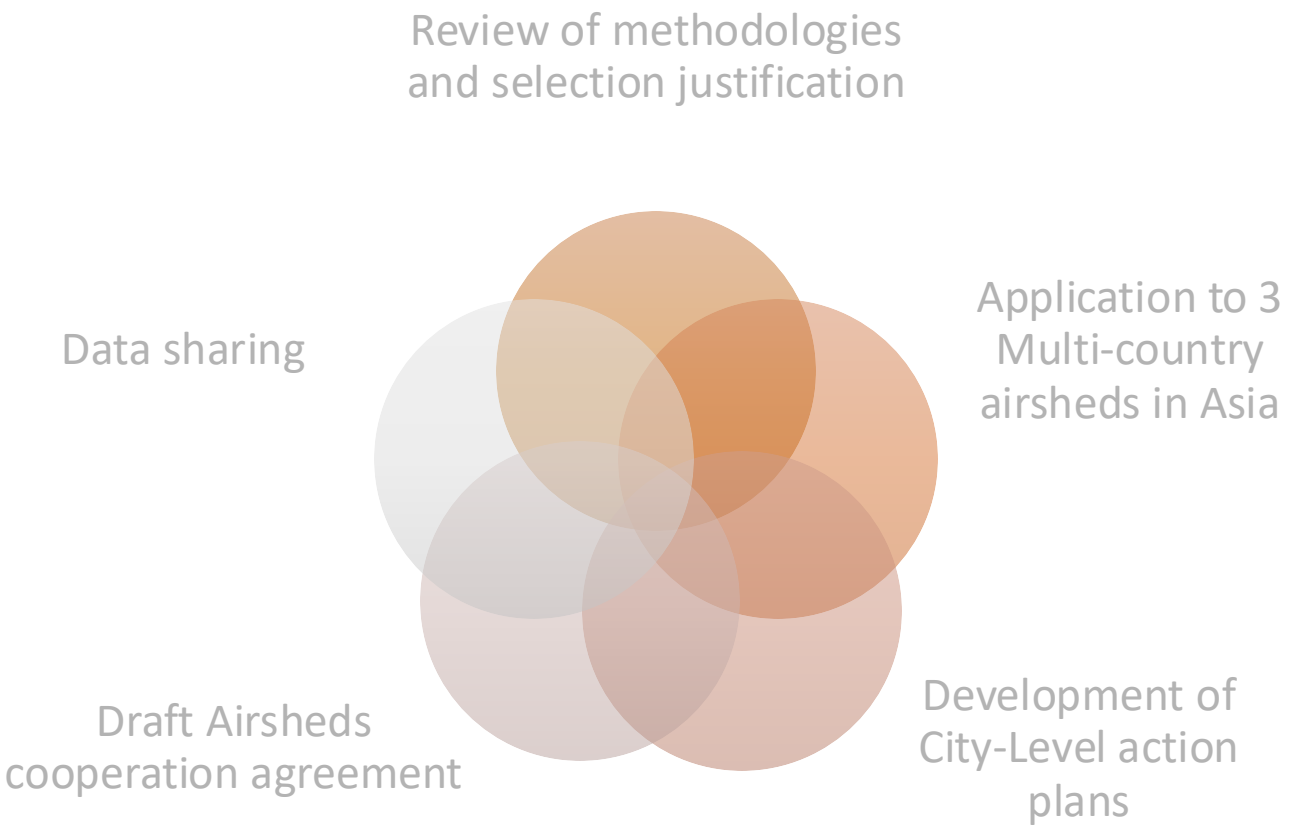
GEMS Goal

The project will focus on the improvement air quality in multi-country airsheds.

The engagement of stakeholders at all levels of jurisdiction will enhance regional cooperation and strengthen collaboration among cities/subnational authorities and national governments.

Transboundary Airshed's Goal

Project Activities 2024-2026



Current Airsheds Definition:

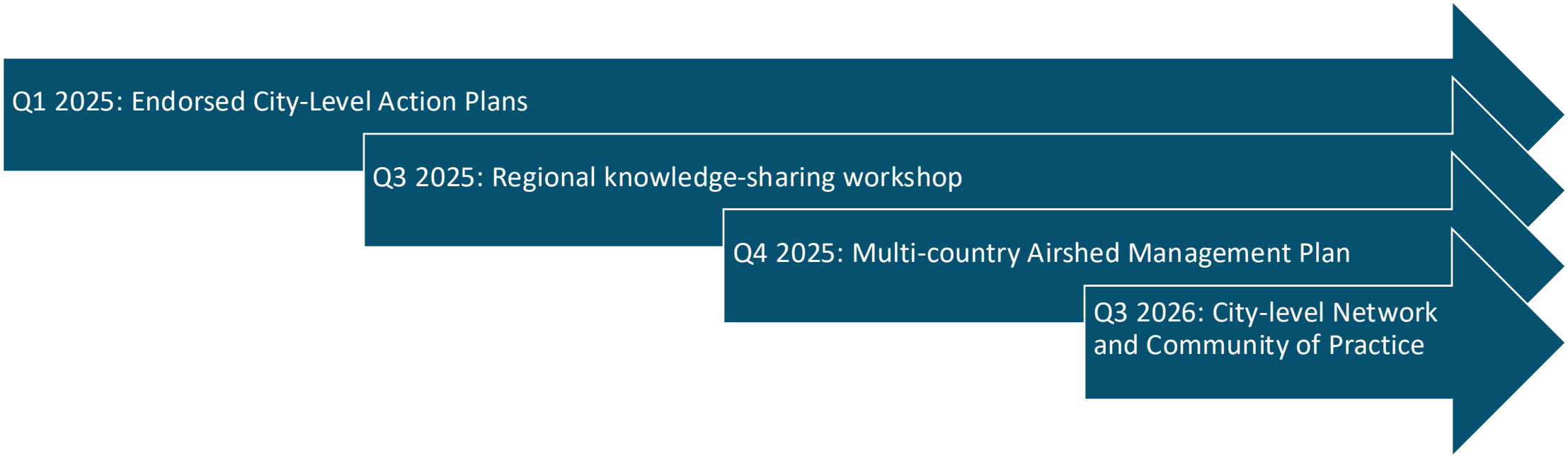
A geographic area affected by the same air mass defined by topography, meteorology and/or climate. Air quality within the airshed will depend on pollution sources within it, but not outside it.

- Pollution levels within an airshed can vary.
- Within an airshed there may be areas where pollution levels are elevated
- Analogous to watershed concept but may be more demanding to sample as air pollution comes from a variety of nonpoint sources.

Project Timeline: Support Science-Based Policy



Project Timeline: Establish Networks



Upcoming Activities: Pilot Cities



An Expert Group Meeting to review air pollution trends and analysis in the region to **identify goals** of the Action Plan

Stakeholders in pilot cities develop action plans to **effectively improve air** quality for resilient and sustainable urbanization

Stakeholders in pilot cities to launch Action Plan, and **measure and monitor** the project outcomes in order to fine-tune the approach

City Workshops

What Will Happen At This Event?



The purpose of this planning workshop is to convene key urban air pollution stakeholders to **reach a joint agreement** on initiatives and actions to air pollution for their city.

The workshop objectives are to:

- **Validate** baseline data and scientific evidence
- **Define** key themes and interventions
- **Identify** and prioritise actions and instruments

The expected workshop outcomes:

- **Understanding** of sources, pathways and possible hotspots
- **Enhanced knowledge** of how to mitigate air pollution
- Increased **capacity to act on effective policies** and activities that reduce emissions, concentrations and exposure
- A better understanding of the **city's role** in national/regional **advocacy efforts**

City Action Planning

What Is A City Action Plan?

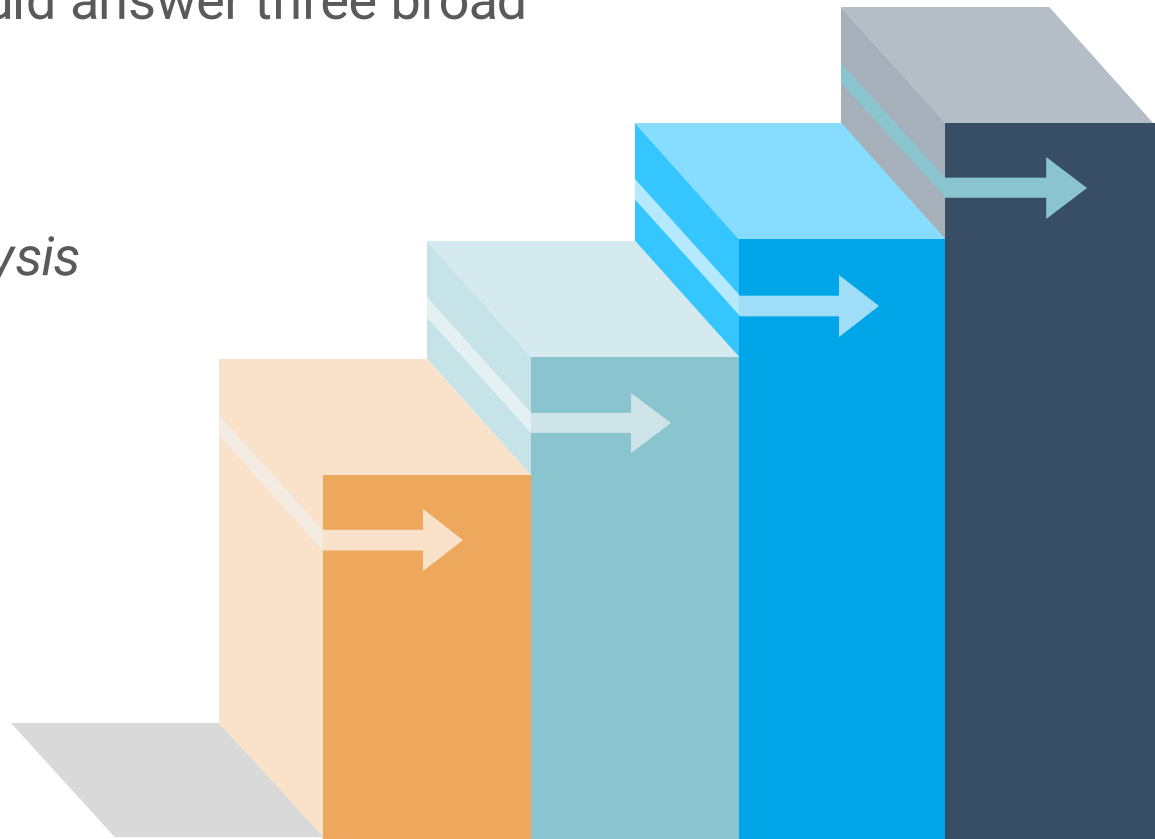
A city action plan is a policy instrument that **establishes specific goals** and details what steps must be taken in order to achieve each goal.

The process of achieving a robust City Action Plan should answer three broad questions:

1. What is the current situation?
   The science/evidence through a baseline and gap analysis

2. What can we do about it?
   Intervention Planning

3. How do we implement it?
   Action





Science-based Measures

What Types Of Policy?

A 2019 UNEP/CCAC report identified 25 proven and cost-effective measures - that if implemented, could give one billion people living in Asia access to clean air by 2030.

The policy recommendations represent the framework of what our project is trying achieve throughout the region- identifying the most appropriate solutions for cities based on their context.

Example Interventions

Lessons learned which may be of benefit to Cambodia

Air Filters for Pregnant Women

A project will be initiated to provide high quality air filters in the homes of selected pregnant women. Approximately 40 air filters, together with a 2-years of supplies will be provided as a donation from ESCAP to support the intervention.



Proposal: Training and Procurement for the use of Satellite Data

With support of ESCAP, focal points will be designated to receive training and capacity building to utilize the data from the remote sensing in the air pollution and smart city efforts.



Proposal: Air Pollution Alerts

In cooperation with the Asian Disaster Preparedness Center, new tools will be developed to predict hazardous air pollution conditions, inform affected persons, and communicate potential mitigation measures. This project proposes to provide more information to residents.



Proposal: Smart Parking

With support from ESCAP, the city will take the lead in developing mobile app based software to facilitate a smart parking solution for the downtown area



Sensor Proposal



Best Available Option – Selection Criteria

- Measures PM2.5
- High reliability as demonstrated by AIRLAB Microsensors Challenge 2021
- Available in Cambodia
- Easily Publish data

Probable Option: IQAir Airvisual Pro

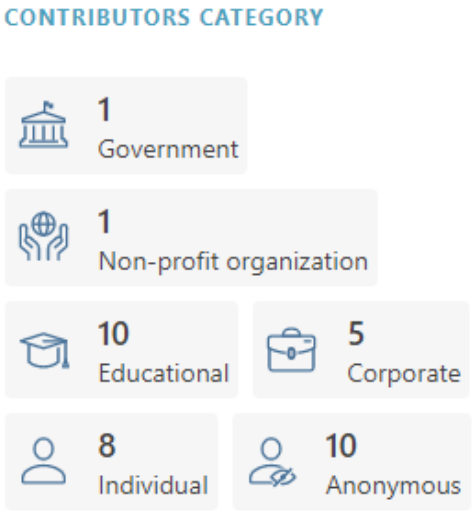


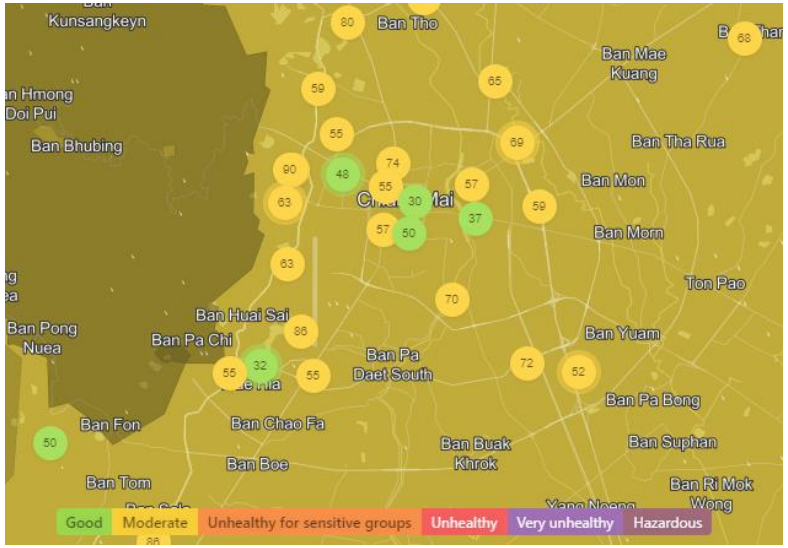


Example Implementation

- ESCAP
  - Procure and provide approximately 30-40 sensors
  - Advise and support implementation

- Municipality of Chiang Mai
  - Identify installation locations
  - Install and configure devices
  - Publish Data on IQAir website





Which Projects to Move Forward?



What does this mean for Cambodia?



Phase 1
(June 2024 -Sept 2024)

~30,000k USD For Remote Sensing at the National Level

- Training
- Procurement of equipment
- Integration of satellite data into national systems



Phase 2
(Oct 2024-Dec 2026)

~30,000k USD for direct support to beneficiary cities

- Enhancing waste disposal systems
- Biogas generators
- Protecting Vulnerable Populations
- Coordinating with Neighbors



Next Steps



Prepare Draft Studies



Coordinate with Cities and local stakeholders



Virtual Project Inception Meeting (May 27)



Letter of Agreement and Transfer of Funds

QUESTION AND ANSWER

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