



# Partnerships and Diplomacy: U.S. Department of State Air Quality Monitoring Program



# Outline

- State Department's unique operating environment
- Internal and external air quality monitoring goals
- Evolution of the program
- Diplomacy and engagement
- Partnership opportunities

# State Department Operating Environment

- Over **60,000 people** worldwide in **over 190 countries**
- **Short-term exposure:** US government employees are at Post for 1-4 years
- Most US diplomats bring **families**, including aging parents and young children
- US diplomats are mostly **generalists** and are always **pressed for time**
- US government is mostly in charge of housing, utilities
- U.S. diplomatic missions are **high profile**

# AQM Timeline

By 2013, all U.S. posts in China had monitors.

State Headquarters launches Air Pollution Working Group.

State Department launches Air Quality Fellows program with EPA.



# US Posts by Air Quality (Original Audit)



## Ambient Air Quality Scaling System\*

**Level (0)** – Evidence of ambient air pollution levels comparable or lower to the most polluted place in the U.S.

**Level (1)** – Evidence of ambient air pollution levels exceeding levels in the most polluted place in the U.S. but below 2x this threshold.

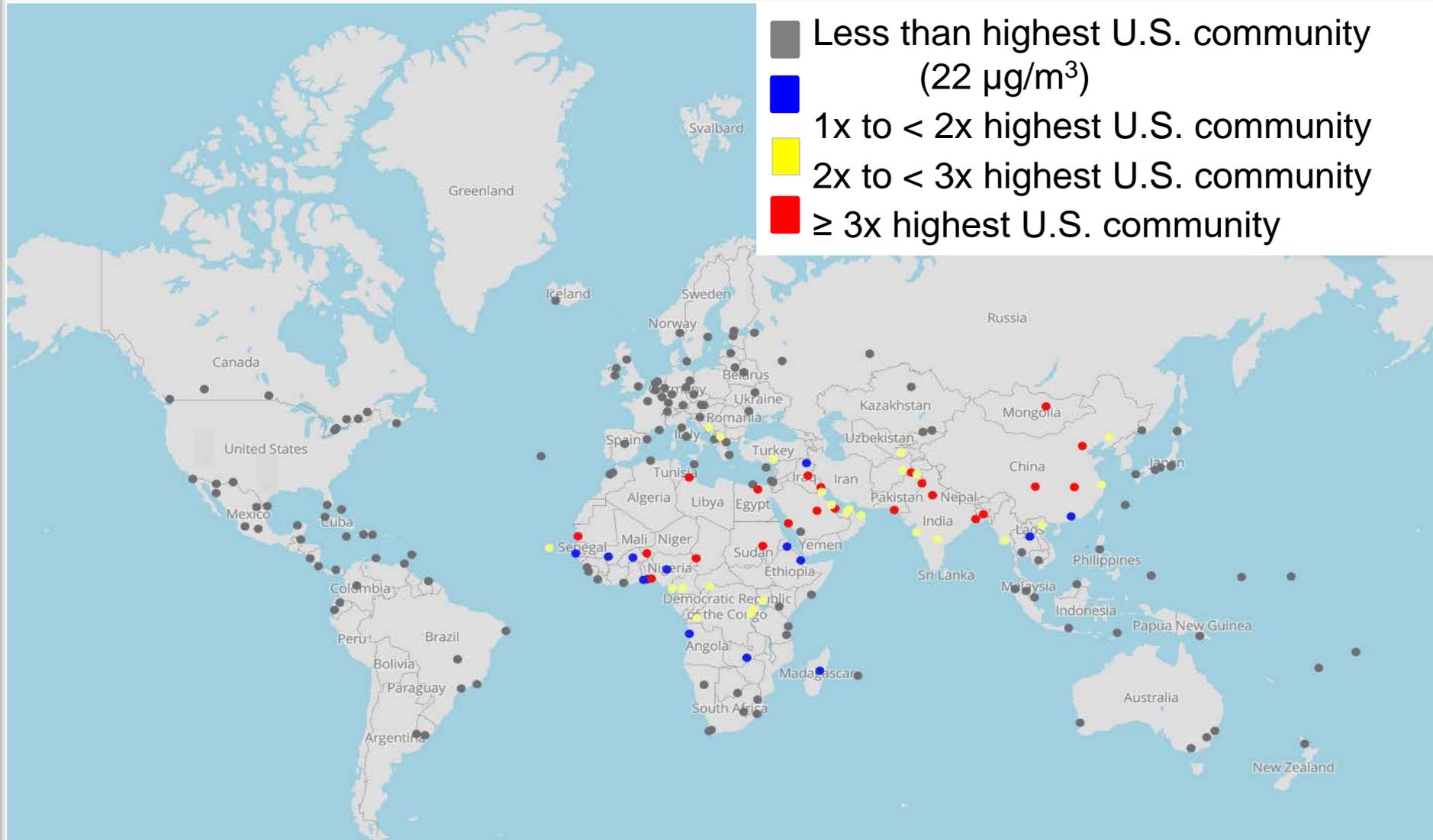
**Level (2)** – Evidence of ambient air pollution levels exceeding 2x this threshold but below 3x this threshold.

**Level (3)** – Evidence of ambient air pollution levels exceeding 3x levels

**Level (-1)** – No data to make a categorization

\*This analysis accounts for PM2.5 pollution

# Four-tier Classification of Annual Average $PM_{2.5}$ Concentrations (New Audit)



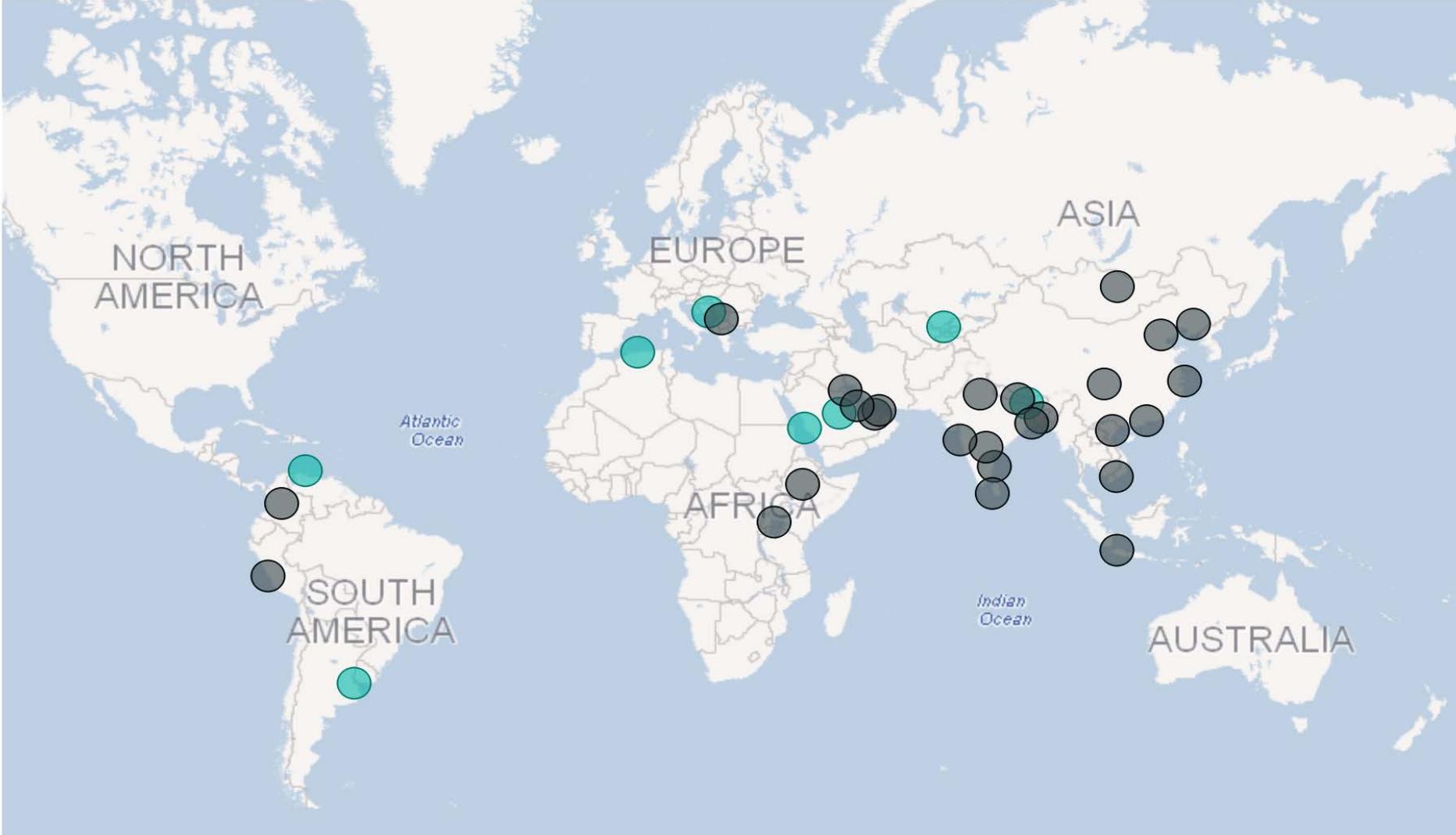
# Central Program Goals

- Protect U.S. personnel
- Utilize sound data and analysis for management decisions
- Achieve economies of scale for program by leveraging partnerships, USG assets (such as AirNow)
- Evaluate and anticipate enterprise risk
- Contribute to advancing scientific understanding of air pollution and its effects
- Enhance diplomatic engagement
- Promote American expertise, innovation, and technology overseas

# Embassy and Consulate Monitor Locations

Post and Monitor

Monitor ● Ordered ● Y

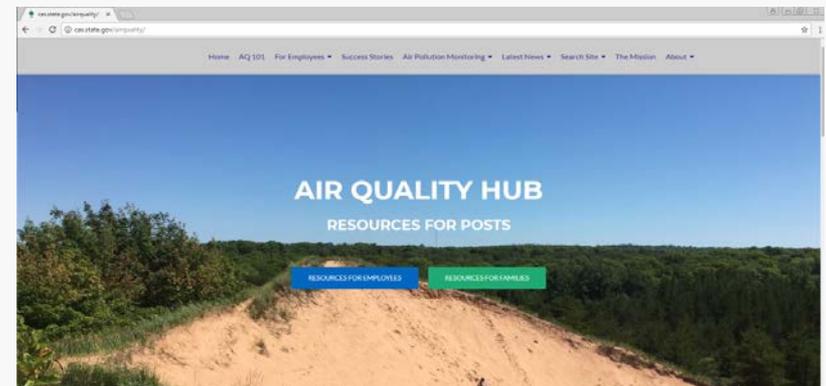


# Program Evolution

- How to set up a robust, defensible, and cheap-as-possible enterprise system?
- How do we educate Post personnel and host governments?
- How do we ensure ongoing maintenance at least staff time and cost as possible?
- How do we secure the network and utilize cloud computing capabilities?
- How can we partner with sources of funds and expertise?
- **What do we do with this data? How can we make it understandable and actionable? How do we balance real-time data requests with QA/QC and health studies considerations?**

# Questions and Issues

- When should strenuous outdoor activity be discouraged for sensitive individuals? Children? Adults?
- Run room air cleaners on high always or monitor? Make a clean air shelter? Do we provide room air cleaners for locally employed staff?
- Implement use of respirators? To whom should respirators be provided? What type?
- Should we implement shorter tour lengths for high polluted posts?
- Should we medevac pregnant women or allow early departures from Posts?
- What should our health criteria be to serve at high air pollution Posts?
- Should we be undertaking health monitoring for susceptible populations?
- Do we add an “air” rest and recuperation trip?
- Do we allow people to skip work on high pollution days so they don’t have to commute? If so, what is that cut off?
- How do we address the psychological and physiological issues in a sustainable way?



# External (Yay!)

“I’ve never seen an initiative of the U.S. government have such an immediate, dramatic impact in a country. We engage the Chinese government and people on a wide range of issues from human rights to the rule of law. The response by the Chinese people and government on the environment has been unprecedented.”

*- U.S. Ambassador Gary Locke, 2013*

# Air Quality Program @ State



# AirNow

Go



## Local Air Quality Conditions

Zip Code:

Go

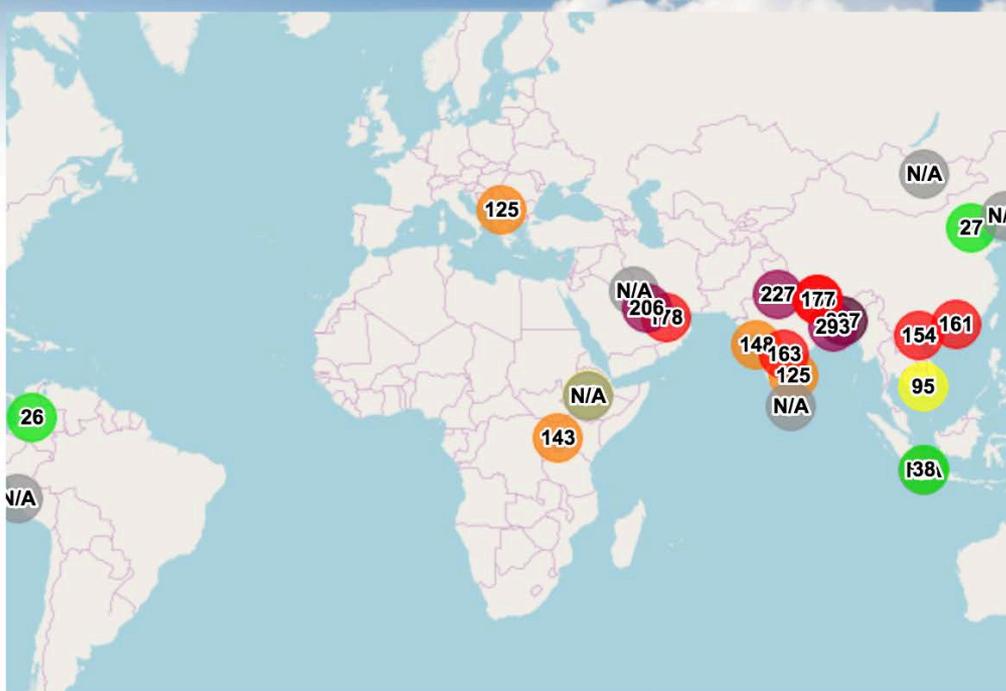
State : Alabama

Go

My Current Location



AirNow Department of State



Select a City

Select...

Select a Parameter

Select...

## Welcome to AirNow DOS

AirNow DOS collects Air Quality Monitoring data from U.S. embassies and consulates around the world to inform U.S. personnel and citizens overseas.

Is your country interested in air quality monitoring? Check out AirNow International, the EPA's information package on how to set up a country-wide air quality monitoring program.

*AirNow DOS is powered by the U.S. Department of State in partnership with the U.S. EPA*

Note: Values above 500 are considered Beyond the AQI. Follow recommendations for the Hazardous category. Additional information on reducing exposure to extremely high levels of particle pollution is available [here](#).



## Air Quality Monitor

[Home](#) | [Embassy & Consulate](#) | [U.S. Embassy Hanoi](#) | [Air Quality Monitor](#)

- 1. [Ambassador Dan Kritenbrink](#)
- 2. [Deputy Chief of Mission Caryn R. McClelland](#)
- 3. [Key Officers](#)
- 4. [Sections & Offices](#)
- 5. [Air Quality Monitor](#)
- 6. [Business Opportunities](#)

Thank you for your interest in air quality! This factsheet is divided into three parts: air quality monitoring, why outdoor air quality is important, and Frequently Asked Questions (FAQ).

- The U.S. State Department, in collaboration with the U.S. Environmental Protection Agency (EPA), puts air quality monitors on some of its facilities to provide information to help protect the health of American personnel and citizens overseas.
- The U.S. Embassy is responsible for the operation of an instrument that measures particulate pollution with a size of 2.5 microns in diameter or smaller, commonly referred to as PM2.5.
- Please note that citywide analysis cannot be done with data from a single monitor. This data provides an accurate measure of the air quality for PM 2.5 in the section of Hanoi close to the U.S. Embassy.

**Current Conditions**  
observed at  
**Jan 24, 2018 3:00 AM (LT)**

**154 AQI**  
**Unhealthy**  
**PM2.5**

**Health Message**  
Everyone may begin to experience health effects when AQI values are between 151 and 200. Members of sensitive groups may experience more serious health effects.

Note: Values above 500 are considered Beyond the AQI. Follow recommendations for the Hazardous category. Additional information...

**Translation**

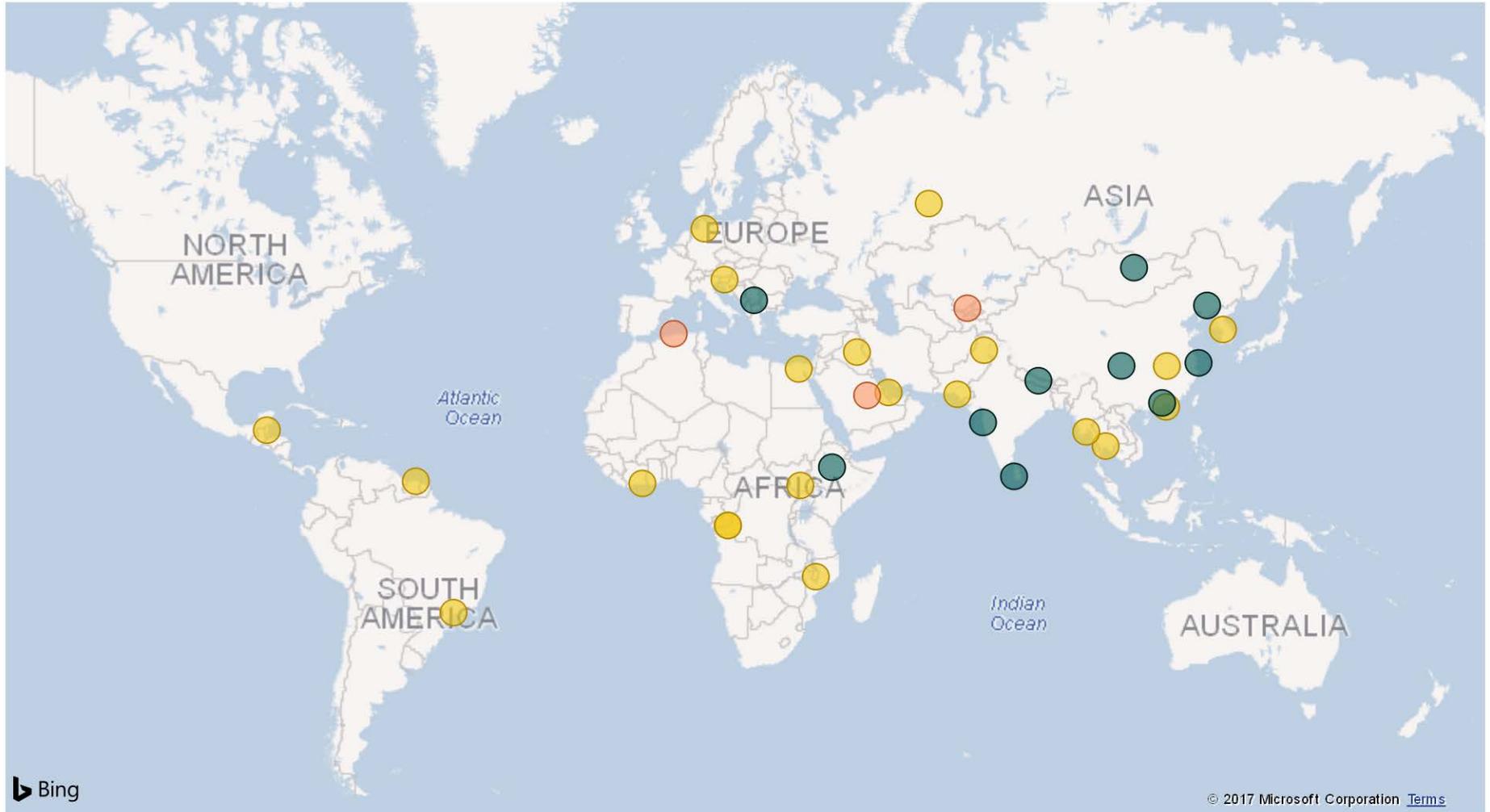
[Tiếng Việt](#)



**Contact Us**

# Fellow/Post Pairings

City and Monitor



Bing

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Monitor ● (Blank) ● Ordered ● Y

# Fellows' Projects

- Help deploy low-cost sensors to evaluate trends
- Review available data and do exploratory analysis
- Evaluate area satellite data
- Conduct meetings/workshops/events with host country on air quality with Post
- Assist Posts with maintenance and management questions
- And many more.

# Partnerships



## Private Sector

Google

Sensor companies

Microsoft

Intel

## Universities and Researchers

National Academies of Science (NAS)

Fellows' Host Universities

## NGOs

United Nations Environment Program (UNEP)

World Health Organization (WHO)

World Bank

## U.S. Government

U.S. Environmental Protection Agency (EPA)

National Aeronautics and Space Administration (NASA)

Peace Corps

US Agency for International Development (USAID)

## Host Governments

# How We Can Partner

- Become an Air Quality Fellow!
- Studies
- Exchanges
- Monitor Deployment and Testing Overseas
- Diplomatic Corps Convening for Projects
- Data Analysis
- Maintenance and Management Support
- Air Quality Awareness Week
- Content and Materials Dissemination

# Stay in Touch

- <http://state.gov/ecodiplomacy>
- <http://bit.ly/ecocapitalsforum>



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