



**CLIMATE &  
CLEAN AIR  
COALITION**  
TO REDUCE SHORT-LIVED  
CLIMATE POLLUTANTS



**Supporting Clean Air Science and Regional  
Cooperation project to deliver key  
components of the Promoting International  
Commitment and Global Action for Air  
Quality Management  
with Clean Climate & Development Co-  
Benefits**

**BreatheLife Workshop – Meeting Report**

**June 29<sup>th</sup>, 2022**

**BREATHELIFE**

This publication was prepared by Clean Air Institute for the Climate and Clean Air Coalition.

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Clean Air Institute (CAI) is an international non-profit organization based in Washington DC. CAI's mission is to catalyze processes for addressing air pollution and climate change at local, national and international scales, to benefit public health and protect the environment. Learn more at:

<http://www.cleanairinstitute.org>

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## INTRODUCTION

The CCAC/UNEP in the framework of the project “Supporting Clean Air Science and Regional Cooperation project to deliver key components of the Promoting International Commitment and Global Action for Air Quality Management” funded by GIZ, have been developing activities to foster and sustain a political and UN-coordinated process to improve global air quality in tandem with climate change mitigation and achievement of other sustainable development objectives while increasing political will for consistent action and funding for air quality worldwide.

As part of this project, Clean Air Institute was selected to organize and deliver a BreatheLife Workshop for Latin America and the Caribbean aiming to increase awareness and improve capacities of national and subnational government entities in the region for cutting SLCP through BreatheLife city-based trainings and other strategic activities.

This report presents a summary of a 2 days-virtual training workshop to strengthen capacities of cities in LAC regarding the WHO’s AirQ+ tool and health impact assessment by reaching the WHO air quality guidelines levels.

### **BREATHELIFE WORKSHOP FOR LATIN AMERICA AND THE CARIBBEAN: USING AIRQ+ TO ESTIMATE PUBLIC HEALTH BENEFITS OF ADVANCING AIR QUALITY OBJECTIVES IN LAC CITIES**

Ambient air pollution is a major environmental health problem affecting everyone in low-, middle, and high-income countries. Exposure to high levels of air pollution can cause a variety of adverse health outcomes. It increases the risk of respiratory infections, heart disease, stroke, and lung cancer. Such effects affect largely the most vulnerable population, children, the elderly, and women. According to WHO’s estimations, ambient air pollution was linked to 4.2 million premature deaths worldwide per year in 2016. This mortality is due to exposure to fine particulate matter of 2.5 microns or less in diameter (PM<sub>2.5</sub>), which cause also cardiovascular and respiratory disease, and cancers. As part of this problem, more than 150 million people in Latin America and the Caribbean (LAC) live in cities with levels of air pollution exceeding WHO air quality guidelines.

Assessing the health impacts of air pollution has proven to be a key instrument to support policy making and implement interventions to improve air quality. By estimating the health benefits of air quality improvements, policy makers gather important evidence to enable the investments and stakeholder engagement required to mobilize action towards public health protection, air quality improvements and climate change mitigation.

The World Health Organization has developed AirQ+; a computer-based tool to estimate the burden of disease attributable to air pollution. The tool has been widely used in the Americas and WHO is currently preparing to release its first Spanish version.

# BREATHELIFE

As a part of the activities of the BreatheLife network, the Climate and Clean Air Coalition (CCAC), the United Nations Environmental Programme (UNEP), and the Pan American Health Organization (PAHO), in collaboration with Clean Air Institute (CAI) delivered a workshop aiming to use AirQ+ to estimate the health benefits from main cities in Latin America and the Caribbean meeting WHO Air Quality Guidelines (AQG) for PM2.5.

## Workshop Details

On the 15<sup>th</sup> and 22<sup>nd</sup> of July it was hosted a 2 days-virtual training workshop to strengthen capacities of cities in LAC regarding the WHO's AirQ+ tool and health impact assessment by reaching the WHO Air Quality Guidelines levels. In preparation for the workshop, Clean Air Institute has worked with city officials preparing case studies to estimate the health co-benefits of reaching WHO AQG for PM2.5.

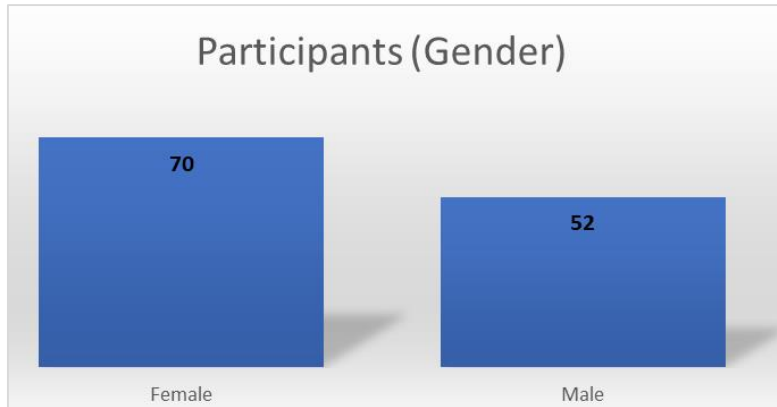
In a collaborative work with CCAC, PAHO and UNEP, the cities to be part of this workshop were analyzed listing those which could have a bigger coverage of population to be included in the assessment as well as to possibly have the proper information to run the analysis in AirQ+. It was also considered to engage those cities with initial efforts towards improving air quality in which air quality and climate change awareness could be increased by supporting public policies by being in possession of the facts provided by this tool.

Thanks to the synergistic work among all the institutions, it was possible to include **7 cities in this assessment** (two more than initially considered) which were:

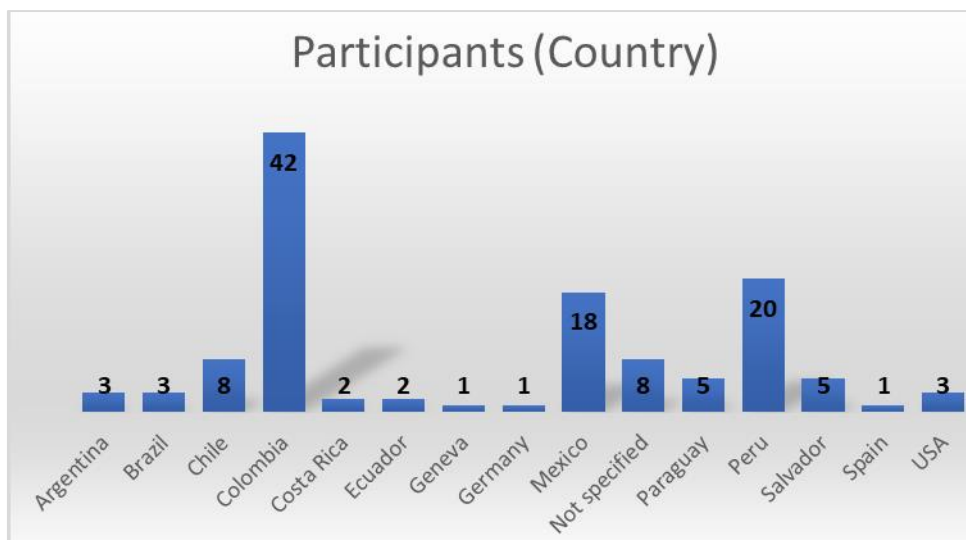
- |                         |                       |
|-------------------------|-----------------------|
| 1. Bogota, Colombia     | 5. Santiago, Chile    |
| 2. Lima, Peru           | 6. Asuncion, Paraguay |
| 3. Mexico City, Mexico  | 7. Salvador, Brazil   |
| 4. San Jose, Costa Rica |                       |

These workshop sessions were delivered in Spanish language with simultaneous interpretation into English and had the participation of officials from the national and subnational levels, as well as non-governmental entities that work on the subject. In total, **122 people participated** in both sessions, **70 females and 52 males** from approximately **15 countries**:

- |               |              |
|---------------|--------------|
| 1. Argentina  | 8. Germany   |
| 2. Brazil     | 9. Mexico    |
| 3. Chile      | 10. Paraguay |
| 4. Colombia   | 11. Peru     |
| 5. Costa Rica | 12. Salvador |
| 6. Ecuador    | 13. Spain    |
| 7. Geneva     | 14. USA      |



**Figure 1. Workshop Participants – Gender Breakdown**



**Figure 2. Workshop Participants – Country Breakdown**

In Annex 1 a file is attached compiling the participant lists per each of the workshop sessions.

## Session 1

### Virtual Cities Training Session

Friday, July 15<sup>th</sup>, 2022

09:00 am – 12:00 pm ET

Audience: Air quality managers and public health analysts from participant cities

**Objective:** Strengthen the capacities of local governments from Latin America and the Caribbean in the estimation of health risks due to air pollution, in order to:

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- Demonstrate the collateral benefits for health of reaching the WHO AQG for PM2.5, and
- Support the decision-making process and the implementation of actions contained in the decontamination programs in these cities aimed at improving air quality and protecting the health of the population.

**Content:** This session featured interventions by WHO, the National Institute of Public Health of Mexico, PAHO, UNEP and moderation by the Clean Air Institute. Topics covered in this session were:

- AirQ+ in the Evaluation of Health Co-benefits
- Introduction to Assessing the Health Impacts of Air Pollution
- AirQ+ Practice Exercise for participating cities

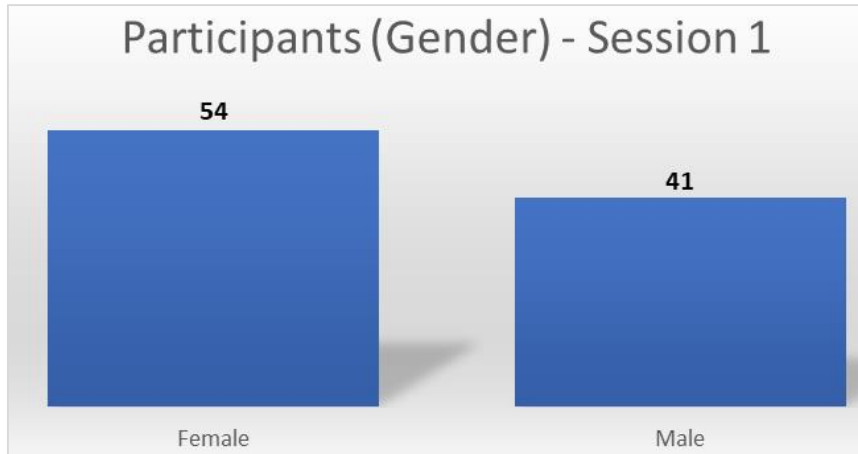
Some screenshots of the event are presented below.



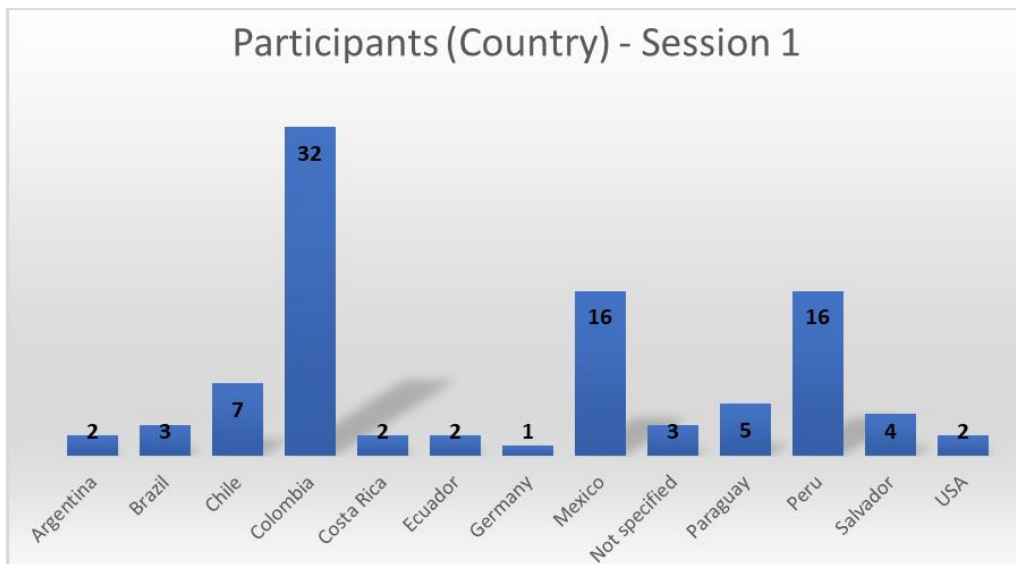
**Figure 3. Screenshots Session 1 BreatheLife Workshop**

Day one of the workshop has been focused on AirQ+ Training. The session had the participation of **95 attendees** including air quality managers and public health analysts with national representatives from Ministries of Health and Ministries of Environment from countries across Latin America and the Caribbean. In Figures 4 and 5 the participation breakdown by gender and country is presented.

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**Figure 4. Session 1 Workshop Participants – Gender Breakdown**



**Figure 5. Session 1 Workshop Participants – Country Breakdown**

Annex 2 includes the agenda, support material, presentations by the speakers and the recording of the event.

**Interventions and questions from attendees:**

- a) Lorena Catalina B:
  - When do you plan to upload the GBD 2019 information to the AirQ+?
  - Is information by gender going to be generated for outdoor air quality in the AirQ+, as well as indoor air quality?
- b) Maureen Amin: What are the air pollutants available to assess with AirQ+?
- c) Carol Ordoñez Aquino: Is it possible to only include mortality or morbidity by type of CIEE Health Risk Index?

- d) Patrick Connerton: If I am using the population of only the age group of interest, would the percentage (population at risk) be 100%?
- e) Rosana Abrutzky: If we use PM10 data, is it being converted to PM2.5, in the scenario tab?
- f) Magaly Guevara OPS PERU: In the event that the concentrations are exceeded and above the limit value, the Linear Log (beta) calculation method is used? And the result shows acute + chronic impacts together?
- g) Finally, multiple messages of thanks were received from the participants regarding the responses provided and for the high-quality of the presentation.

## Session 2

### Virtual Workshop-Case Studies and Results

Friday, July 22<sup>nd</sup>, 2022

09:00 am – 12:00 pm ET

Audience: Latin America and the Caribbean National and Local authorities from health and environment, and institutions working in the field

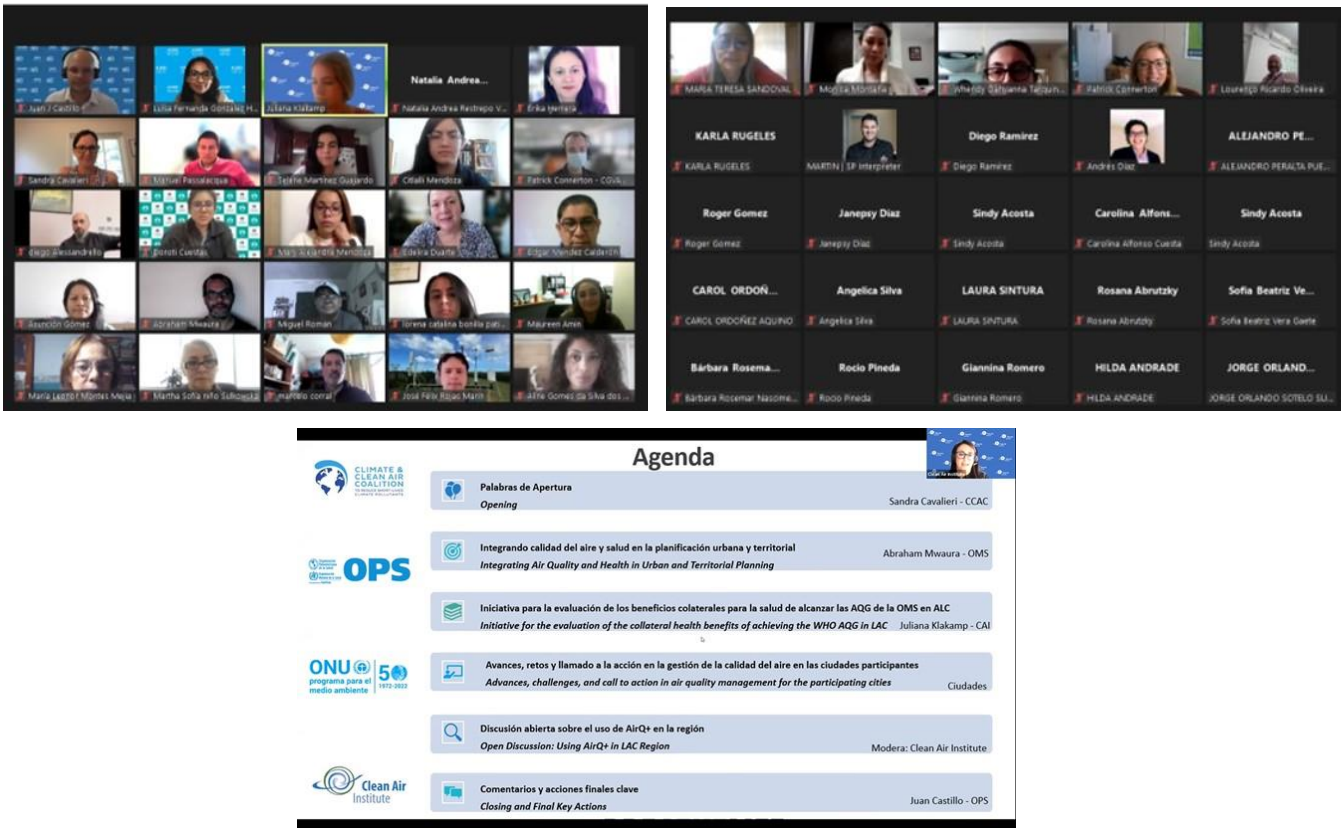
**Objective:** Increase capacities to assess health and climate impacts of urban air pollution and raise awareness among participants about the need and urgency for expanded action across Latin America.

**Content:** This session featured interventions by CCAC, WHO, representatives of each participating city, PAHO and moderation by the Clean Air Institute. Topics covered in this session were:

- Integrating Air Quality and Health in Urban and Territorial Planning
- Presentation of the initiative addressed for the evaluation of the collateral health benefits of achieving the WHO AQG in LAC cities
- Advances, challenges, and call to action in air quality management for the participating cities
- Open Discussion: Using AirQ+ in LAC Region

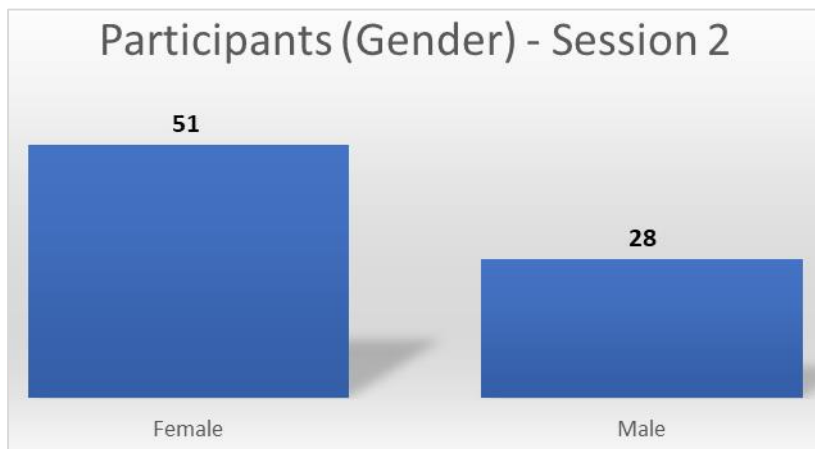
Some screenshots of the event are presented below.



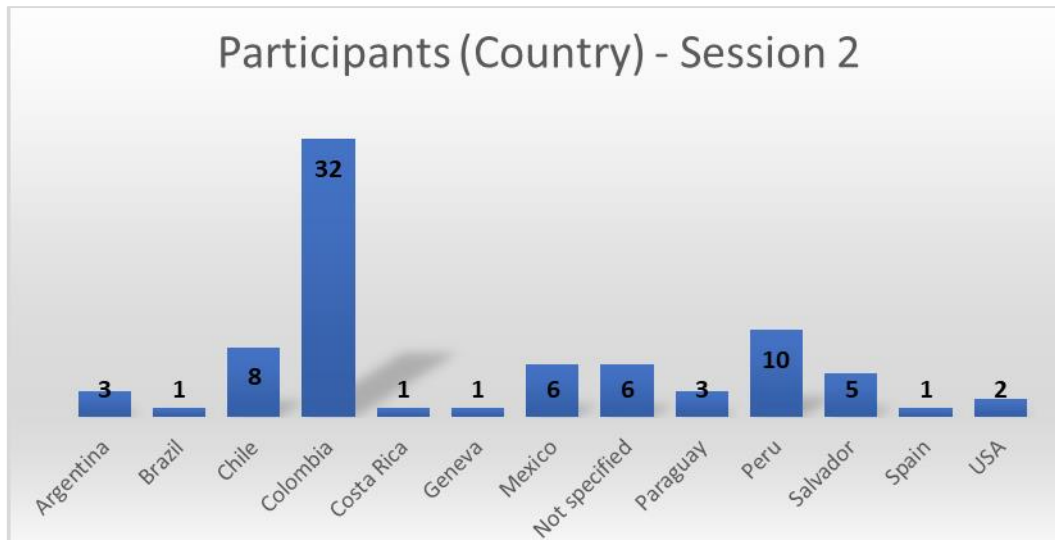


**Figure 6. Screenshots Session 2 BreatheLife Workshop**

Day two was a high-level event, open to the BreatheLife Network and LAC cities and countries; in which main results were presented and action and high-level political commitment were mobilized to advance in public health, air quality, and climate action in the region. The session had the participation of **79 attendees**. In Figures 7 and 8 the participation breakdown by gender and country is presented.



**Figure 7. Session 2 Workshop Participants – Gender Breakdown**



**Figure 8. Session 2 Workshop Participants – Country Breakdown**

Annex 3 includes the agenda, support material, presentations by the speakers and the recording of the event.

**Interventions and questions from attendees:**

h) Lorena Catalina B:

- What is the source of information used to obtain the average estimated medical costs for illnesses and also mortality?
- It is very interesting to see the results for Latin America
- Does PAHO/WHO have a program similar to that of the EPA to certify trainers in AirQ+?

i) Abraham Mwaura:

- We do not have a certificate. We are available to continue training in the region and could explore doing a training of trainers.
- We would gladly accept submissions of articles outlining city interventions (telling your story) for the BreatheLife website. We have a template you can follow if you are interested.

j) Selene Martinez Guajardo: As Lorena mentioned, we are also interested in knowing if there is a consultancy, workshop or certification for the use of AirQ+ for NGOs that are promoting an improvement in air quality management. Thanks.

k) Maureen Amin: From your experience, what difficulties have you encountered for regulators and legislators to integrate these health results into their decisions, what would you recommend?

l) Sandra Cortes: Good summary regarding the improvements in air quality in the Metropolitan Region of Chile!

m) Finally, multiple messages of thanks were received from the participants regarding the responses provided and for the high-quality of the presentation.

## RESULTS - USING AIRQ+ TO ESTIMATE PUBLIC HEALTH BENEFITS OF ADVANCING AIR QUALITY OBJECTIVES IN LAC CITIES

Taking into consideration the background key points regarding the relationship between air quality and health:

- According to World Health Organization estimates, ambient air pollution was linked to 4.2 million premature deaths worldwide per year (2016).
- This mortality is due to exposure to fine particles of 2.5 microns or less in diameter (PM<sub>2.5</sub>), which also cause cardiovascular and respiratory diseases and cancer.
- In Latin America and the Caribbean, more than 150 million people live in cities with air pollution levels that exceed the WHO air quality guidelines.
- WHO released the updated Air Quality Guidelines in 2021. This provides an opportunity for the region to set more ambitious air quality goals and implement strategies to reduce air pollution, protect public health and mitigate climate change.
- Assessment of the health impacts of air pollution has proven to be a key instrument to support policy formulation and implement interventions to improve air quality.
- WHO has developed AirQ+, which is a computer tool to estimate the burden of disease attributable to air pollution.

As part of the activities of the BreatheLife network, the CAI and the Coalition for Climate and Clean Air (CCAC) are collaborating in the implementation of the initiative "Assessment of health benefits when reaching levels of the WHO air quality guidelines in Latin American and Caribbean cities", and which is also being co-organized with the United Nations Environment Program (UNEP) and the Pan American Health Organization.

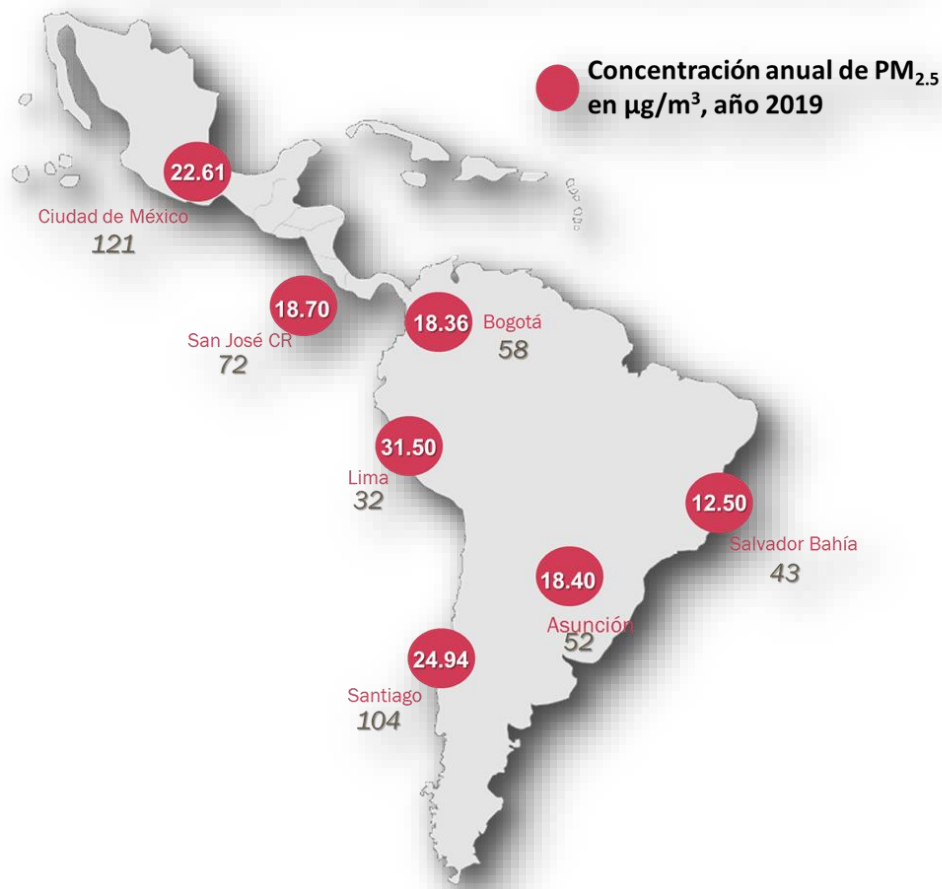
The leading cities in terms of air quality in the region participated in this workshop: Asunción, Paraguay; Bogota Colombia; Mexico City, Mexico; Lima Peru; Salvador, Brazil; San Jose Costa Rica; Santiago, Chile; Buenos Aires, Argentina.

With these cities, the question to be answered was: **What could be the health benefits if the WHO 2021 air quality guideline value of PM<sub>2.5</sub> were reached in your city?**

The results obtained through a rapid assessment using the AirQ+ model showed that **almost 19,000 premature deaths attributable to ambient PM<sub>2.5</sub>** would have been avoided if the WHO 2021 air quality guidelines value had been achieved in these cities.

It is estimated that the burden of disease could have been reduced by up to 12% (total population of +28 million inhabitants).

*Tasa de Mortalidad por cada 100,000 mil hab. atribuibles a la exposición a PM<sub>2.5</sub>, año 2019*



**KEY MESSAGES**

- The 2021 WHO Air Quality Guidelines formulate new air pollution reduction targets to protect public health and save lives around the world. The governments of the region are faced with the opportunity to establish more ambitious air quality objectives and implement management programs and measures in this area (UNEP, 2022).
- The evaluation and communication of the health impacts of air pollution has proven to be a key instrument in decision-making to support the formulation of policies, new programs, projects, regulations and implement interventions to improve air quality. However, there is still a significant need to scale local capacities in assessing the health benefits of air quality improvements.
- In addition, there is an important challenge in terms of financing consistent with the needs for improving air quality in the region that supports the generation of information and scientific data to make informed political decisions.

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