The new **WHO air quality and health database for the Americas**

Unit of Climate Change and Environmental Determinants of Health (CE)

Health impact of air pollution in the Americas

35%
of deaths from
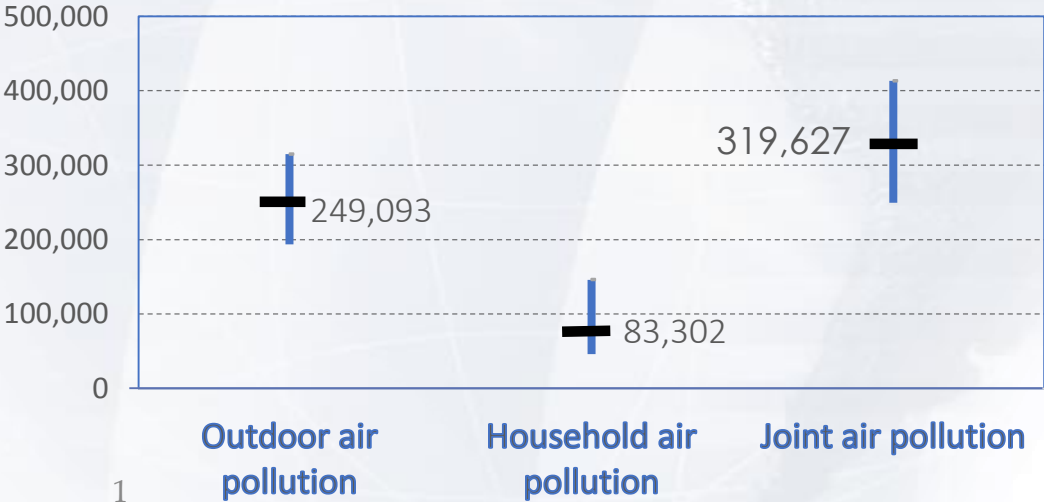**lung disease**

15%
of deaths from
stroke

44%
of deaths from
heart disease

6%
of deaths from
lung cancer

Every year around
7 MILLION DEATHS
globally are due to exposure to air pollution

Deaths attributable to air pollution in the Americas (2016)

- Outdoor air pollution: 249,093
- Household air pollution: 83,302
- Joint air pollution: 319,627

Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

Ambient air quality database

Database coverage for the Americas:

- Number of countries: 20
- Number of cities: 927

Annual mean $PM_{2.5}$ (µg/m³)

- <10
- 10–<15
- 15–<25
- 25–<35
- 35–<50
- >50

Data not available
Data not applicable

$PM_{2.5}$ ground monitors (GM) coverage

0   850   1700   3400 Kilometers

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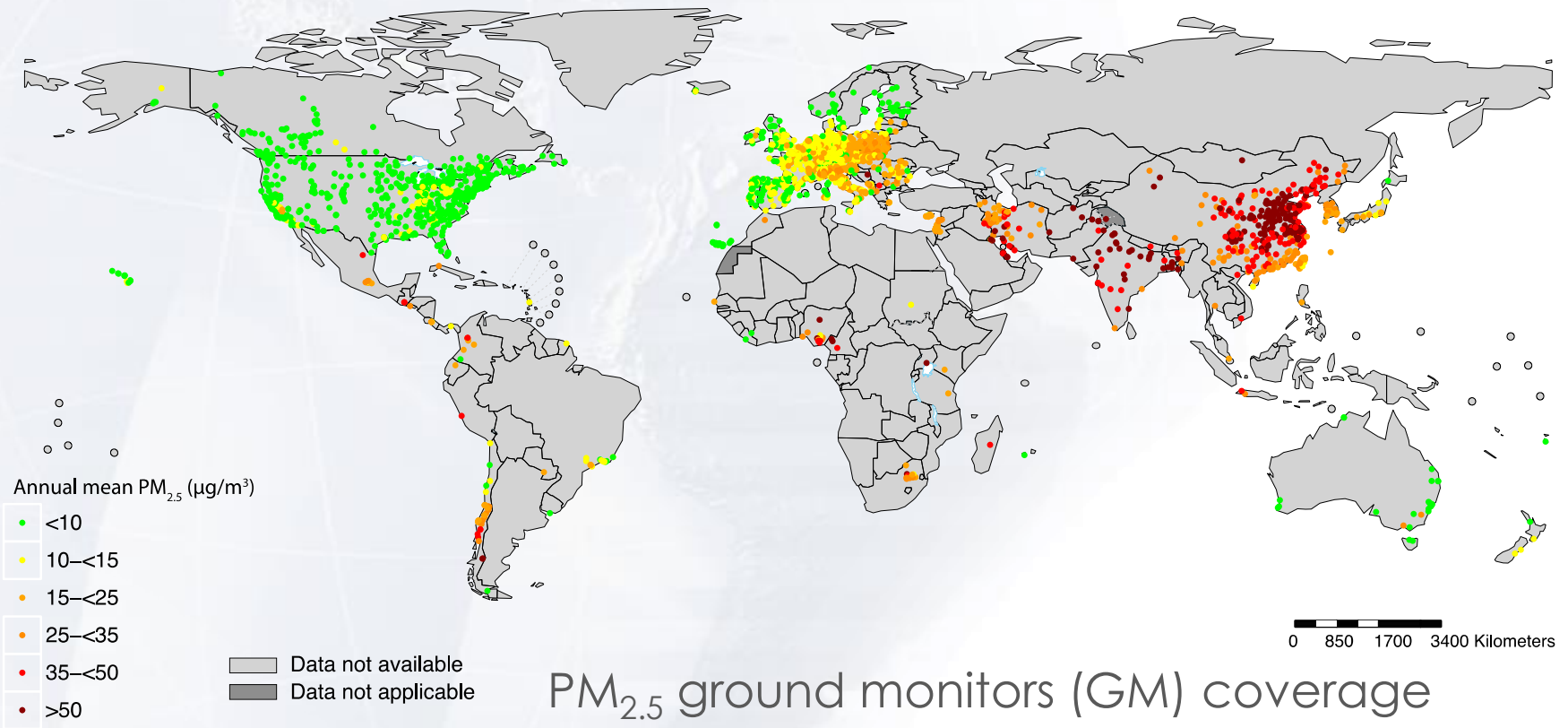
Ambient air quality database

PM$_{10}$ ground monitors (GM) coverage

Annual mean PM$_{10}$ ($\mu g/m^3$)

- <20
- 20–<30
- 30–<50
- 50–<70
- 70–<100
- >100

Data not available
Data not applicable

0   850   1700   3400 Kilometers

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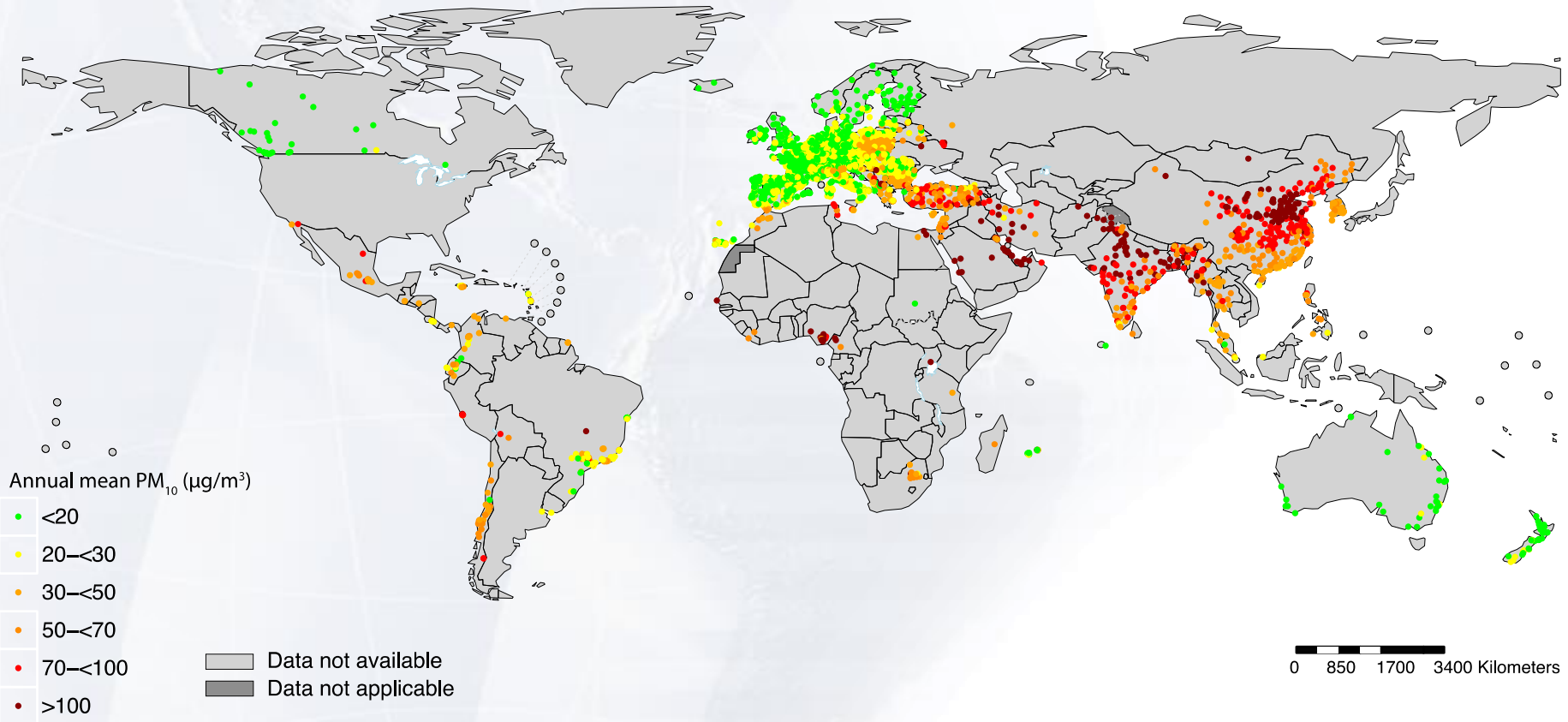
PM$_{2.5}$ modelled estimates

Why:

- To cover areas that are not covered by GM measurements.
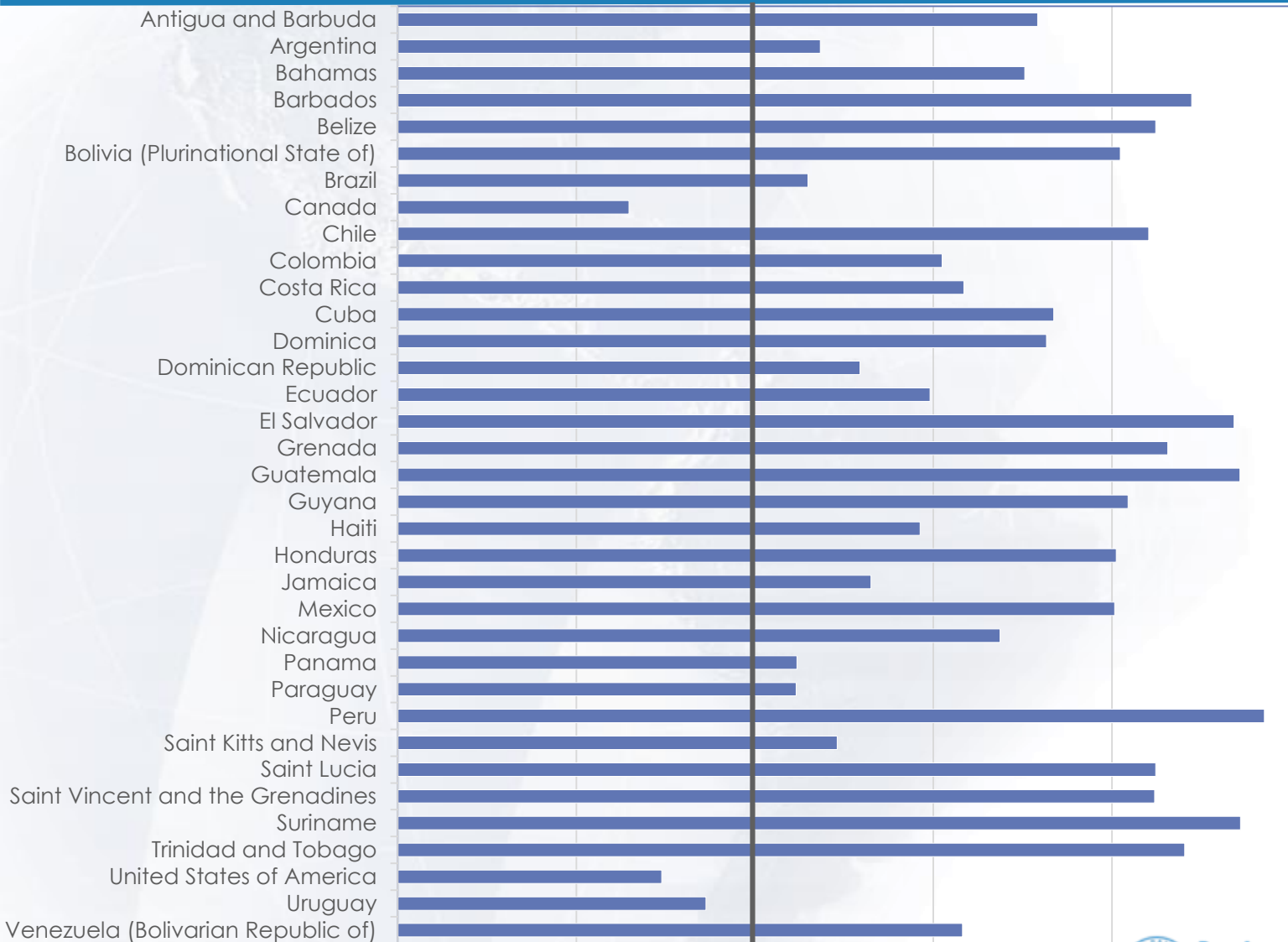- To allow the calculation of the exposure, based on population and PM$_{2.5}$ concentration.

How:

- Using the Data Integration Model for Air Quality
    - Satellite remote sensing (Aerosol optical depth) compared with data from more than 9.000 GMs
    - Population
    - Resolution: $0.1° \times 0.1°$ globally (about 10 km $\times$ 10 km)
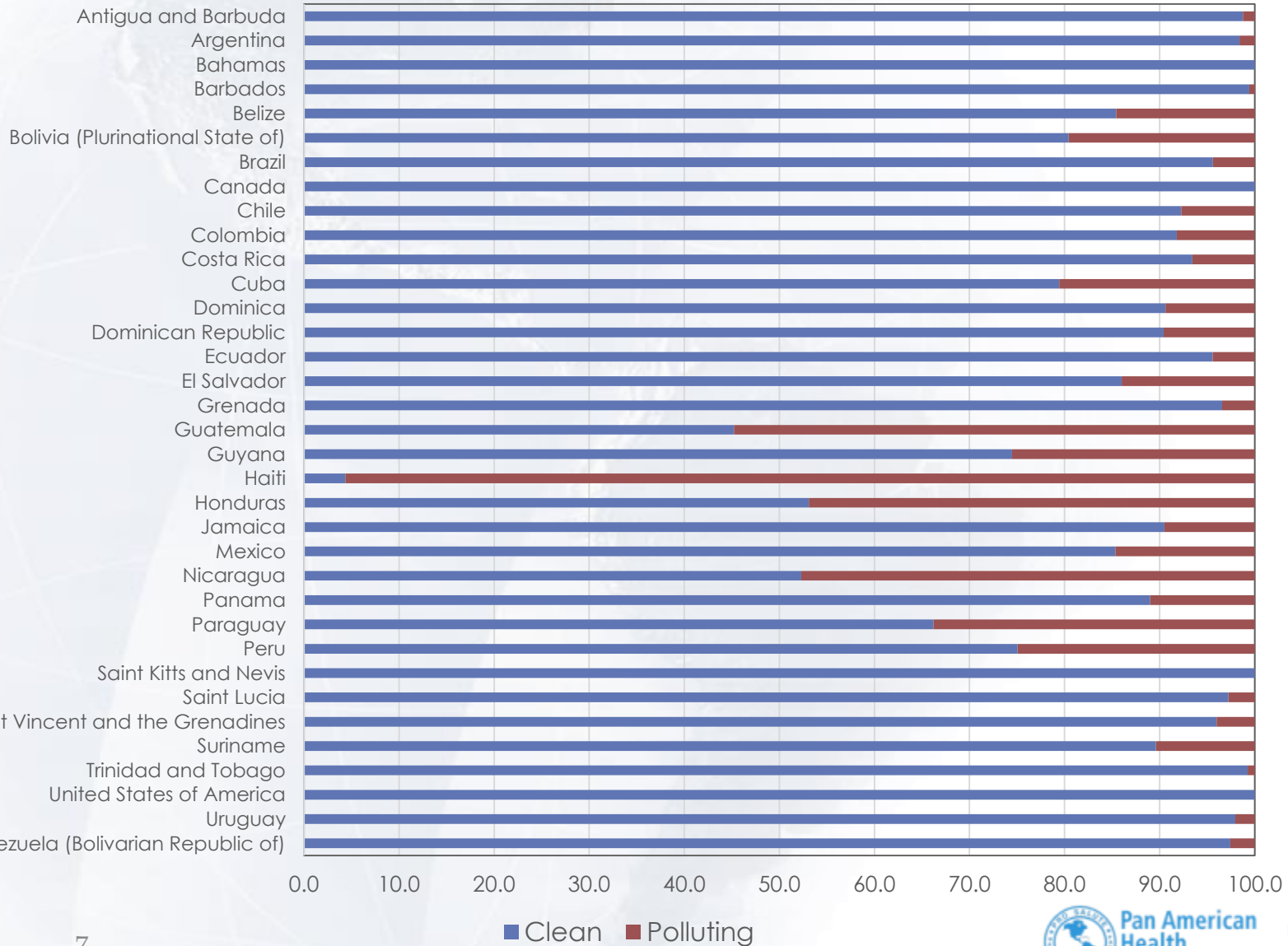
PM$_{2.5}$ modelled estimates: an example
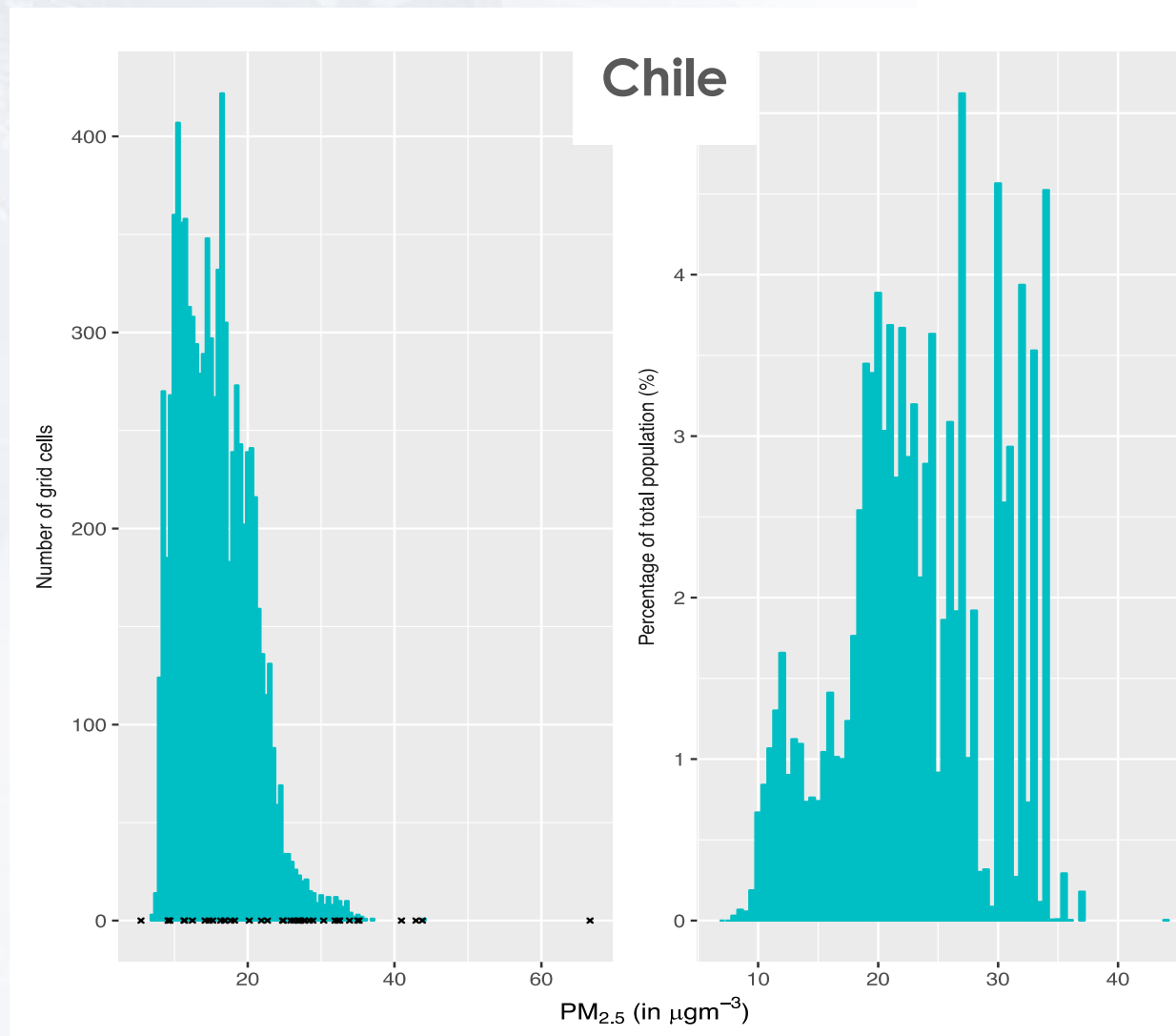
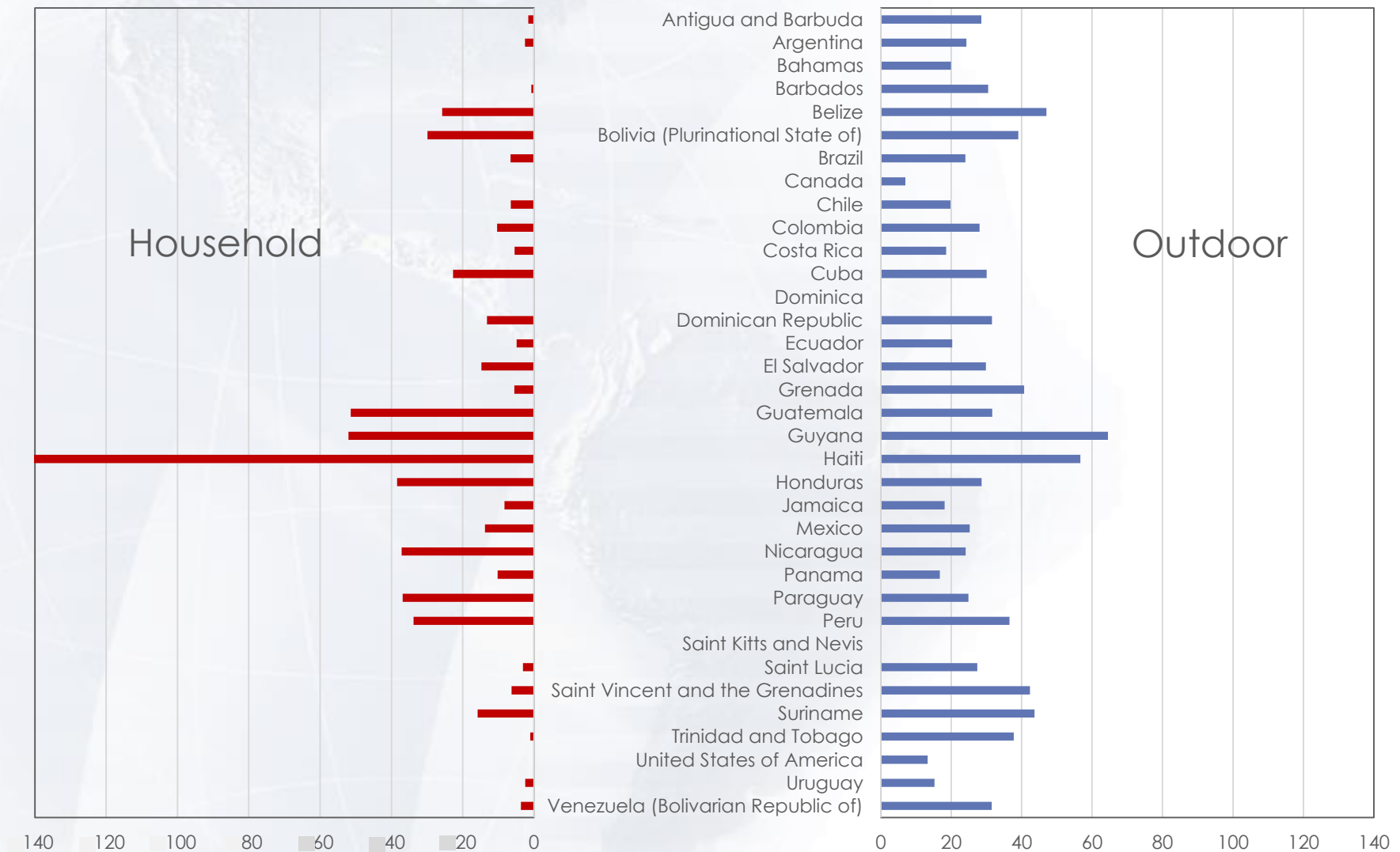# Median modelled PM$_{2.5}$ concentration (µg/m^3) (2016)

WHO guideline value   PM2,5 µg/m^3

Usage of clean and polluting fuels (%)
(2016)

Clean   Polluting

Age standardized mortality (per 100'000) (2016)

Household | Outdoor

Country	
Antigua and Barbuda	
Argentina	
Bahamas	
Barbados	
Belize	
Bolivia (Plurinational State of)	
Brazil	
Canada	
Chile	
Colombia	
Costa Rica	
Cuba	
Dominica	
Dominican Republic	
Ecuador	
El Salvador	
Grenada	
Guatemala	
Guyana	
Haiti	
Honduras	
Jamaica	
Mexico	
Nicaragua	
Panama	
Paraguay	
Peru	
Saint Kitts and Nevis	
Saint Lucia	
Saint Vincent and the Grenadines	
Suriname	
Trinidad and Tobago	
United States of America	
Uruguay	
Venezuela (Bolivarian Republic of)	

140 120 100 80 60 40 20 0   0 20 40 60 80 100 120 140

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SUSTAINABLE DEVELOPMENT GOALS

3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

11 SUSTAINABLE CITIES AND COMMUNITIES

PAHO air quality program

Reduce the adverse health effects of air pollution in the Americas

Mainstreaming health in air quality management

- Expanding the knowledge base
- Monitoring and reporting
- Leadership and coordination
- Institutional capacity strengthening

| Legislation | Planning | Risk analysis | Household energy | Road transport | Health care providers |

Governance

Pan American Health Organization

World Health Organization — Americas

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Thank you!