World Heart Report 2024

Methodological Supplement

Contents

1. Frequently Asked Questions

How were the data sources selected for this report?

Data sources were selected according to some key criteria. Primarily, sources needed to:

a. Be well-utilized and reputable.
b. Be based on robust methodology.
c. Provide data according to sex, and country, and for attributable burden be available separately for indoor and outdoor air pollution, ultimately allowing more specific recommendations to be made.

Why does this report use the World Health Organization (WHO) regional classification?

Several ways of grouping countries into regions exist. However, this year's report adopts the World Health Organization (WHO) regional classification to group countries into regions (see Appendix Figure 1). This classification is widely recognised and used in global health research and offers several advantages for our analysis. Using the WHO classification facilitates alignment with global health priorities and initiatives, such as the Sustainable Development Goals (SDGs) and WHO's Global Health Strategy. By adopting the WHO regional classification, we can leverage existing knowledge, resources, and networks, and ensure our findings are relevant and actionable for policymakers and stakeholders worldwide.

How were the air pollutants presented in this report selected?

This report discusses the key air pollutants linked to cardiovascular disease - particulate matter (PM), nitrogen oxides (NOx), sulphur dioxide (SO_2), ozone (O_3), ammonia (NH_3), and volatile organic carbon compounds (VOCs). The data presented for levels of air pollution and attributable burden of air pollution are specific to $PM_{2.5}$.

How should the comparison of air pollution and CVDs across countries and regions be interpreted?

This comparison shows how each country's CVD burden linked to air pollution levels stacks up against others globally. For example, Appendix Figure 3 uses a colour code to compare the age-standardized ischemic heart disease burden attributable to ambient air pollution across different countries. This burden is measured in Disability-Adjusted Life Years (DALYs), which combine years of life lost due to premature death with years of healthy life lost due to disability. Lighter red colours indicate a relatively lower burden of DALYs due to air pollution, while deeper red shades signify a higher burden. By comparing the colour codes across regions, we can identify countries with a higher or lower disease burden attributable to air pollution in relation to their regional peers.

This visual representation enables us to quickly assess the varying impacts of air pollution on public health across different countries and regions.

2. Methodological supplement

Data presented in this report for $PM_{2.5}$ concentration and attributable mortality are provided by WHO. The below summary is based on extracts from official WHO documentation and explains the process employed by WHO to derive these estimates, underscoring our commitment to transparency and ensuring the reliability of our findings in illuminating the relationship between air pollution and cardiovascular health worldwide[1,2].

2.1 Mean concentration of $PM_{2.5}$

Definition

Fine suspended particles of less than 2.5 microns in diameter ($PM_{2.5}$) is one of the key pollutants linked to effects on health. Indeed, for many outcomes associations are more robust for $PM_{2.5}$ than other air pollutants. When the report refers to the mean concentration of $PM_{2.5}$, the mean is defined as a population-weighted average for the urban population in a country.

Data sources

The primary sources of data on mean concentration of $PM_{2.5}$ were official reports of countries sent to WHO upon request, official national and subnational reports, national and subnational websites that contain measurements of $PM_{2.5}$, and ground measurements compiled in the framework of the Global Burden of Disease project. Measurements reported by the following regional networks were also used: Clean Air for Asia, the Air quality e-reporting database of the European Environment Agency for Europe and the AirNow Programme from the United States embassies and consulates. If such official data were not available, values from UN Agencies, Development agencies and peer-reviewed journals were used.

Types of data

Annual mean concentrations of $PM_{2.5}$ derived from daily stationary measurements or data that could be aggregated into annual means, were used. In the absence of annual means, measurements over a more limited part of the year were used exceptionally to derive the annual mean, if the different seasons were represented. To present air quality data that represent human exposure, urban measurements have been used mainly, comprising urban background, residential areas, commercial and mixed areas or rural areas and industrial areas close to urban settlements. Only data from stationary measurements, as opposed to mobile stations, were included. Air quality stations that covered particular “hot spots” and exclusively industrial areas were not included in the analysis, as such measurements often represent areas with the highest exposure and not mean population exposure. “Hot spots” were either designated as such in the original reports or were qualified as such because of their location, e.g., near exceptionally busy roads. It should be noted that the omission of these measurements might, however, have resulted in underestimates of the mean air pollution in a city. When data from various sources were available for an urban area, only the latest, most reliable sources were used. For locations for which no new data were available, data from the previous version of the database were used. Some publicly available data of interest could not be retrieved or used because they were not in one of the four languages selected for the search (i.e., English, French, Portuguese, and Spanish) or they provided incomplete information (such as the reference year or station coordinates). Data were used as presented in the original sources.

Search strategy

When official reporting from countries to WHO was not available, websites of national ministries of the environment and health and statistics offices were screened for publicly available data.

Data processing and reporting

When they were available, means for cities and towns reported in the original sources were included. When a mean was not provided, data from the eligible monitoring station in the city or town were averaged. As monitoring stations may be placed in locations that do not represent the level of background pollution, aggregation of their data may not necessarily represent mean air pollution in a city. This risk was partly mitigated by excluding data from monitoring stations located in hot spots, as stated above. The population data used for weighting and for estimating the proportion of the population covered were derived from United Nations Population Statistics[3] (when available) for all the human settlements covered or census data from national statistics offices[4]. When no population data were available, the median for a specific sector of the population was retrieved manually from the latter. Although information on temporal coverage was not always available, the reporting agencies often set a threshold for the number of days covered before reporting the measurements from a station or used it to estimate the city mean.

Method of measurement

Concentrations of $PM_{2.5}$ are regularly measured from fixed-site, population-oriented monitors located within the metropolitan areas. High-quality measurements of PM concentration from all the monitors in the metropolitan area can be averaged to develop a single estimate.

Method of estimation

Although PM is measured at many thousands of locations throughout the world, the number of monitors in different geographical areas vary, with some areas having little or no monitoring. To produce global estimates at high resolution (0.1° grid-cells), additional data is required. Annual urban mean concentration of $PM_{2.5}$ is estimated with improved modelling using data integration from satellite remote sensing, population estimates, topography, and ground measurements.

2.2 Systematic review – Association between exposure to air pollutants and increased risk of CVDs

A systematic search was conducted in PubMed, to identify meta-analyses published between 2010 and 2024 that investigated the association between air pollution and cardiovascular outcomes. A total of 127 papers were initially identified through the search keywords including: ("Air Pollution/adverse effects"[MAJR] OR "Air Pollution/analysis"[MAJR] OR "Air Pollutants/adverse effects"[MAJR] OR "Air Pollutants/analysis"[MAJR]) AND ("Cause of Death"[Mesh] OR "Cardiovascular Diseases"[Mesh]). Following a screening process, 42 papers remained relevant for further analysis.

Data were extracted for the following outcomes: CVD mortality, heart failure, stroke mortality, and myocardial infarction risk for short-term effects, and CVD incidence, heart failure, ischemic heart disease (IHD), and stroke incidence and mortality for long-term effects. Data were grouped based on short- and long-term effects, as reported in the papers.

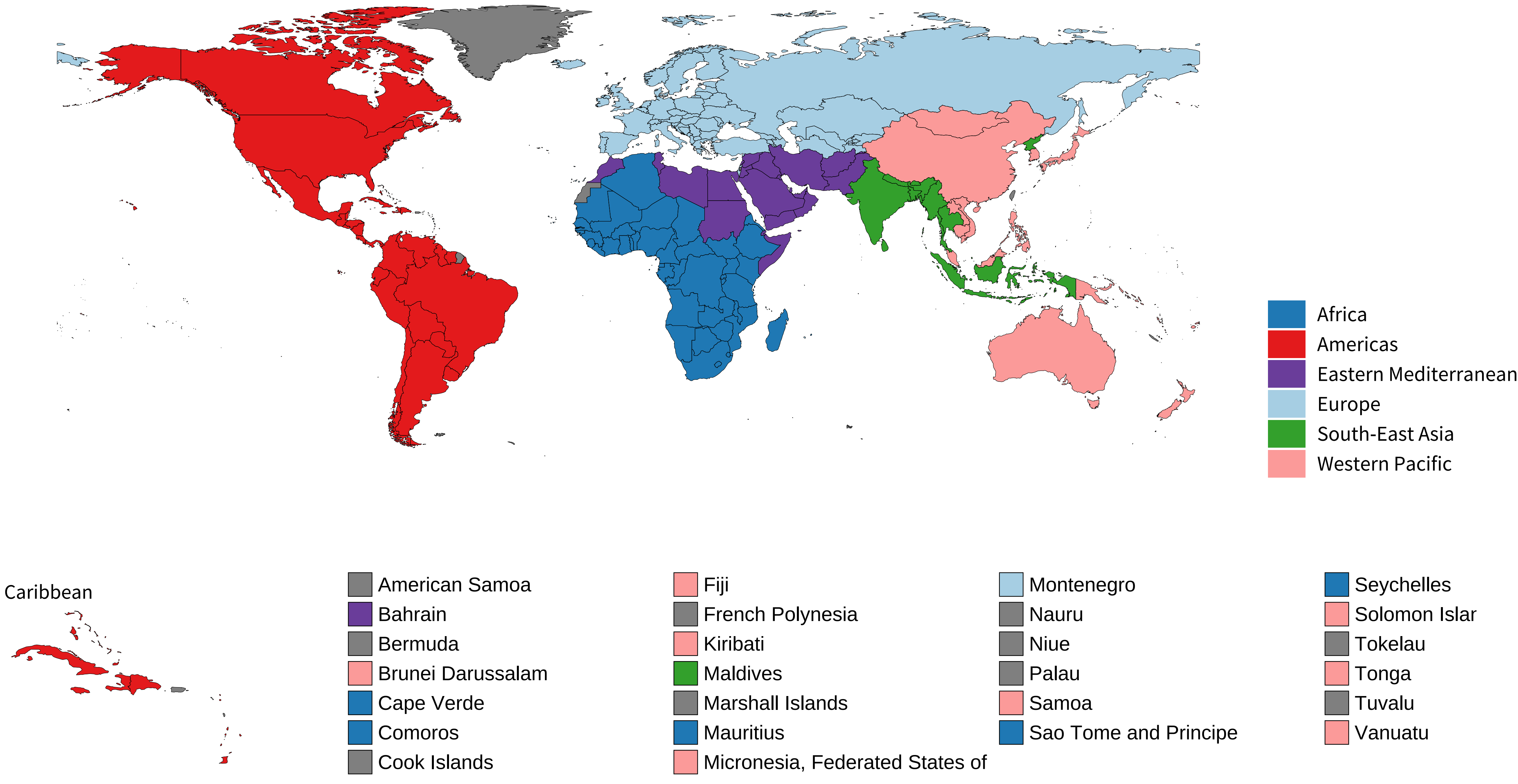
Effects of air pollutants, including black carbon (BC), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulphur dioxide (SO_2), particulate matter with diameters of 10 micrometres or less (PM_{10}), particulate matter with diameters of 2.5 micrometres or less ($PM_{2.5}$), and nitrogen oxides (NO_X), were extracted.

Significant estimates were identified based on the confidence intervals of estimations. In the main report (Figures 9 & 10) we report a subset of the data extracted based on the following criteria: 1) we selected significant estimates for each outcome and air pollutant; 2) following step 1 we selected studies with larger samples; 3) following step 2 we selected papers with the largest geographical representation.

All data extracted are reported in Appendix Table 2.

3. Figures

Appendix Figure 1: Regional classification (based on the World Health Organization regions)

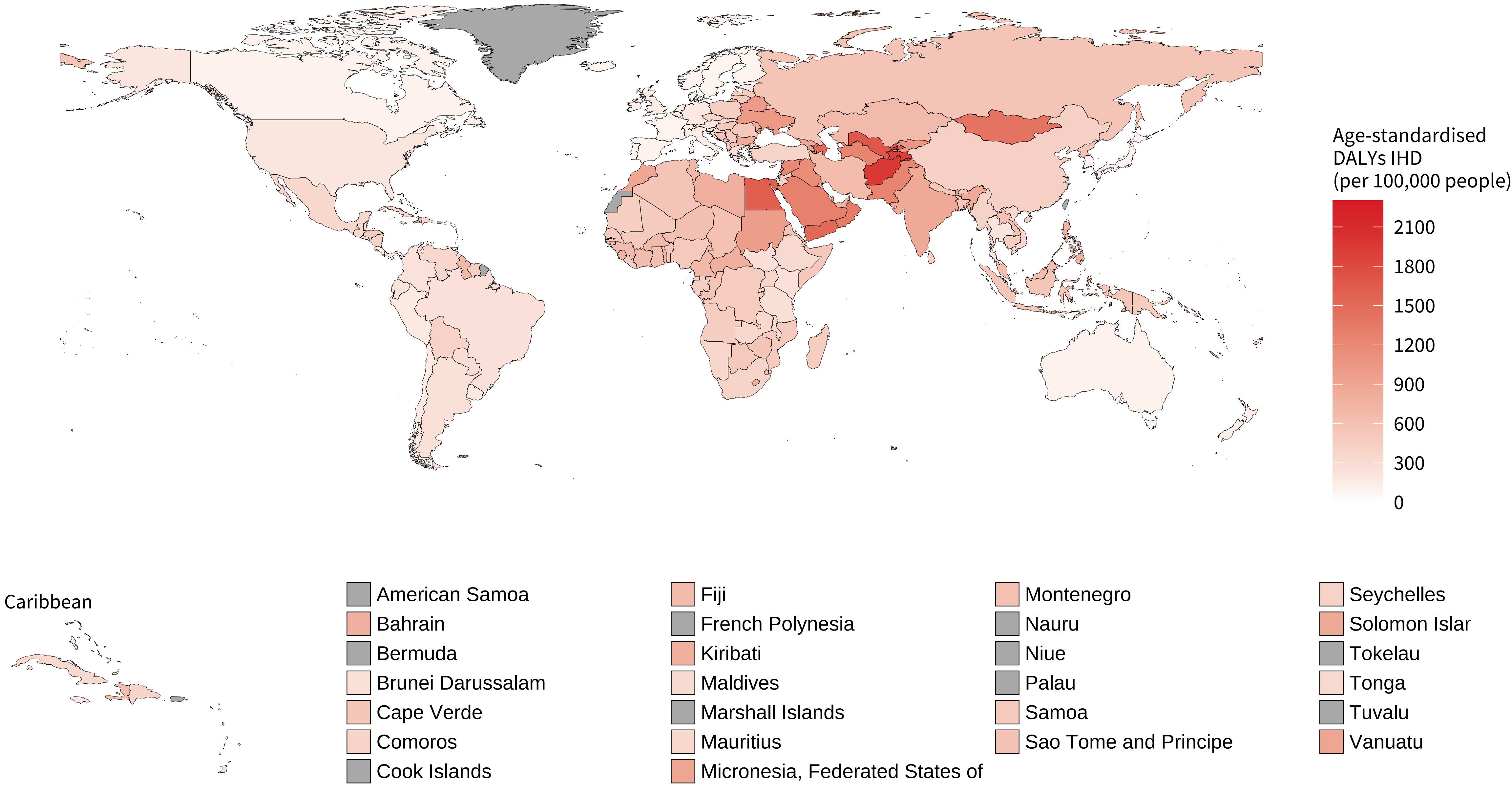

Africa
Americas
Eastern Mediterranean
Europe
South-East Asia
Western Pacific
Caribbean
American Samoa
Bahrain
Bermuda
Brunei Darussalam
Cape Verde
Comoros
Cook Islands
Fiji
French Polynesia
Kiribati
Maldives
Marshall Islands
Mauritius
Micronesia, Federated States of
Montenegro
Nauru
Niue
Palau
Samoa
Sao Tome and Principe
Seychelles
Solomon Islar
Tokelau
Tonga
Tuvalu
Vanuatu

Appendix Figure 2: Changes in PM2.5 concentrations between 2010 and 2019 (all countries; overall and city-level)

Cameroon
Nigeria
Niger
Ghana
Chad
Burkina Faso
Côte d' Ivoire
Mali
Mauritania
Gambia
Guinea
Senegal
Sierra Leone
Togo
Rwanda
Guinea-Bissau
Liberia
Democratic Republic of the Congo
Sao Tome and Principe
Uganda
Benin
Congo
Cabo Verde
Central African Republic
Burundi
Gabon
Equatorial Guinea
Angola
Eritrea
Ethiopia
Algeria
South Sudan
Malawi
South Africa
Lesotho
Seychelles
Zambia
Mozambique
Madagascar
United Republic of Tanzania
Eswatini
Botswana
Comoros
Zimbabwe
Kenya
Namibia
Mauritius
Africa
Peru
Bolivia (Plurinational State of)
El Salvador
Guatemala
Honduras
Chile
Mexico
Venezuela (Bolivarian Republic of)
Nicaragua
Costa Rica
Ecuador
Colombia
Paraguay
Brazil
Jamaica
Panama
Cuba
Argentina
Suriname
Guyana
Belize
Trinidad and Tobago
Haiti
Grenada
United States of America
Uruguay
Barbados
Saint Vincent and the Grenadines
Saint Lucia
Antigua and Barbuda
Saint Kitts and Nevis
Dominica
Canada
Dominican Republic
Bahamas
Americas
Afghanistan
Kuwait
Qatar
Egypt
Saudi Arabia
Pakistan
Bahrain
United Arab Emirates
Iraq
Yemen
Oman
Libya
Iran (Islamic Republic of)
Occupied Palestinian territory
Tunisia
Syrian Arab Republic
Jordan
Lebanon
Sudan
Djibouti
Somalia
Morocco
Eastern Mediterranean
Tajikistan
Uzbekistan
Kyrgyzstan
Armenia
Bosnia and Herzegovina
The former Yugoslav Republic of Macedonia
Turkmenistan
Kazakhstan
Azerbaijan
Serbia
Poland
Montenegro
Israel
Bulgaria
Türkiye
Georgia
Albania
Slovakia
Croatia
Czechia
Italy
Belarus
Greece
Slovenia
Hungary
Cyprus
Romania
Ukraine
Malta
Republic of Moldova
Latvia
Belgium
Austria
Germany
Netherlands
France
Lithuania
United Kingdom of Great Britain and Northern Ireland
San Marino
Switzerland
Spain
Luxembourg
Denmark
Monaco
Russian Federation
Andorra
Portugal
Ireland
Estonia
Norway
Sweden
Finland
Iceland
Europe
Afghanistan
India
Democratic People's Republic of Korea
Bangladesh
Nepal
Bhutan
Myanmar
Thailand
Sri Lanka
Timor-Leste
Indonesia
Maldives
South-East Asia
China
Mongolia
Republic of Korea
Philippines
Lao People's Democratic Republic
Malaysia
Viet Nam
Cambodia
Singapore
Japan
New Zealand
Australia
Papua New Guinea
Brunei Darussalam
Vanuatu
Kiribati
Micronesia (Federated States of)
Nauru
Cook Islands
Solomon Islands
Samoa
Marshall Islands
Palau
Fiji
Tonga
Tuvalu
Niue
Western Pacific
Country
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95
$PM_{2.5}$ (µg/m³)
Cities
Total

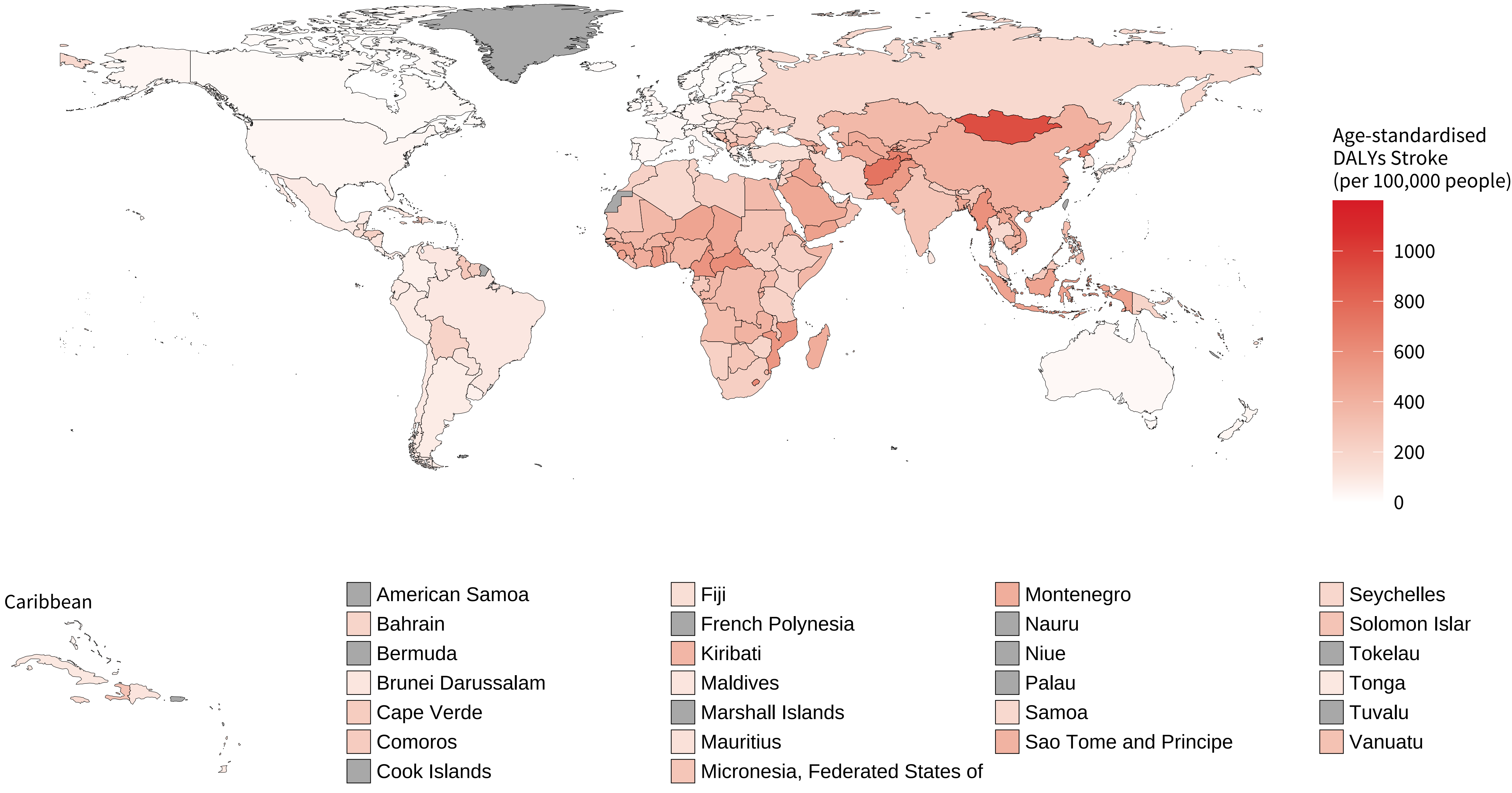
Appendix Figure 3: Age-standardised ischemic heart disease DALYs attributable to ambient air pollution for both sexes, 2019

Source:https://www.who.int/data/gho/data/indicators/indicator-details/GHO/ambient-air-pollution-attributable-dalys-(per-100-000-population-age-standardized)


Age-standardised
DALYs IHD
(per 100,000 people)
2100
1800
1500
1200
900
600
300
0
Caribbean
American Samoa
Bahrain
Bermuda
Brunei Darussalam
Cape Verde
Comoros
Cook Islands
Fiji
French Polynesia
Kiribati
Maldives
Marshall Islands
Mauritius
Micronesia, Federated States of
Montenegro
Nauru
Niue
Palau
Samoa
Sao Tome and Principe
Seychelles
Solomon Islar
Tokelau
Tonga
Tuvalu
Vanuatu

Appendix Figure 4: Age-standardised stroke DALYs attributable to ambient air pollution for both sexes, 2019

Source:https://www.who.int/data/gho/data/indicators/indicator-details/GHO/ambient-air-pollution-attributable-dalys-(per-100-000-population-age-standardized)

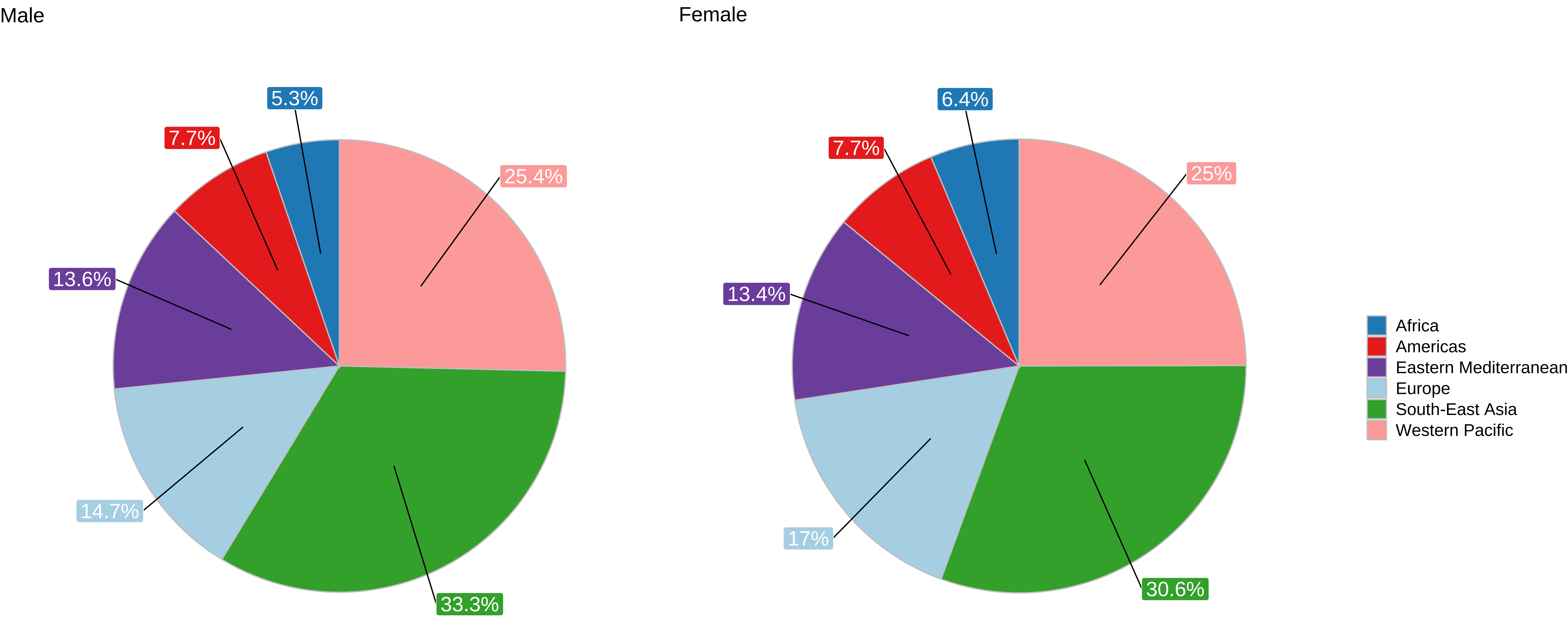

Age-standardised
DALYs Stroke
(per 100,000 people)
1000
800
600
400
200
0
Caribbean
American Samoa
Bahrain
Bermuda
Brunei Darussalam
Cape Verde
Comoros
Cook Islands
Fiji
French Polynesia
Kiribati
Maldives
Marshall Islands
Mauritius
Micronesia, Federated States of
Montenegro
Nauru
Niue
Palau
Samoa
Sao Tome and Principe
Seychelles
Solomon Islar
Tokelau
Tonga
Tuvalu
Vanuatu

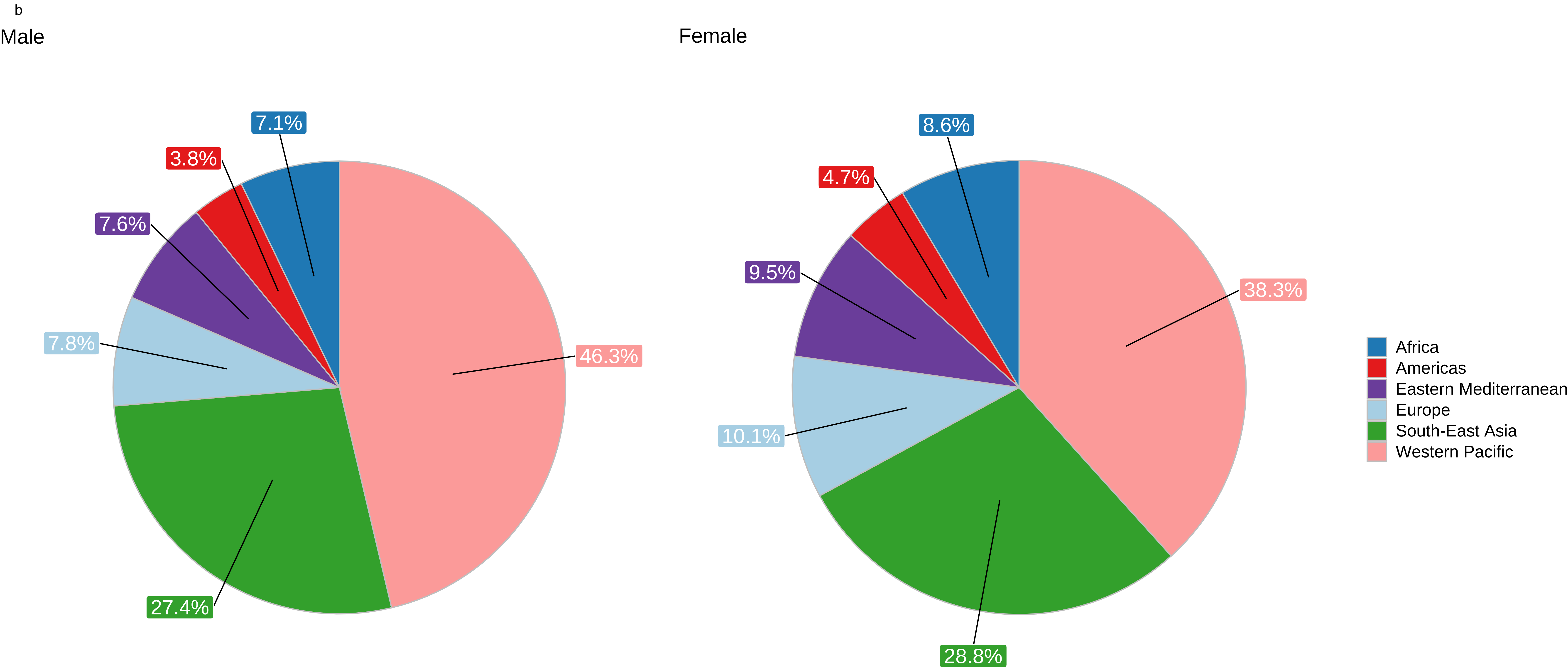
Appendix Figure 5: Percentage of a) ischemic heart disease and b) stroke DALY attributable to ambient air pollution by sex and WHO regions, 2019

Source:https://www.who.int/data/gho/data/indicators/indicator-details/GHO/mbd-aap-ambient-air-pollution-attributable-dalys

Note: The greater number of deaths in one region over another is down to different factors, including air pollution exposure and the population size. For example, Africa and the Western Pacific had similar levels of air pollution exposure in 2019, yet the latter region had a higher number of deaths due to a larger population.

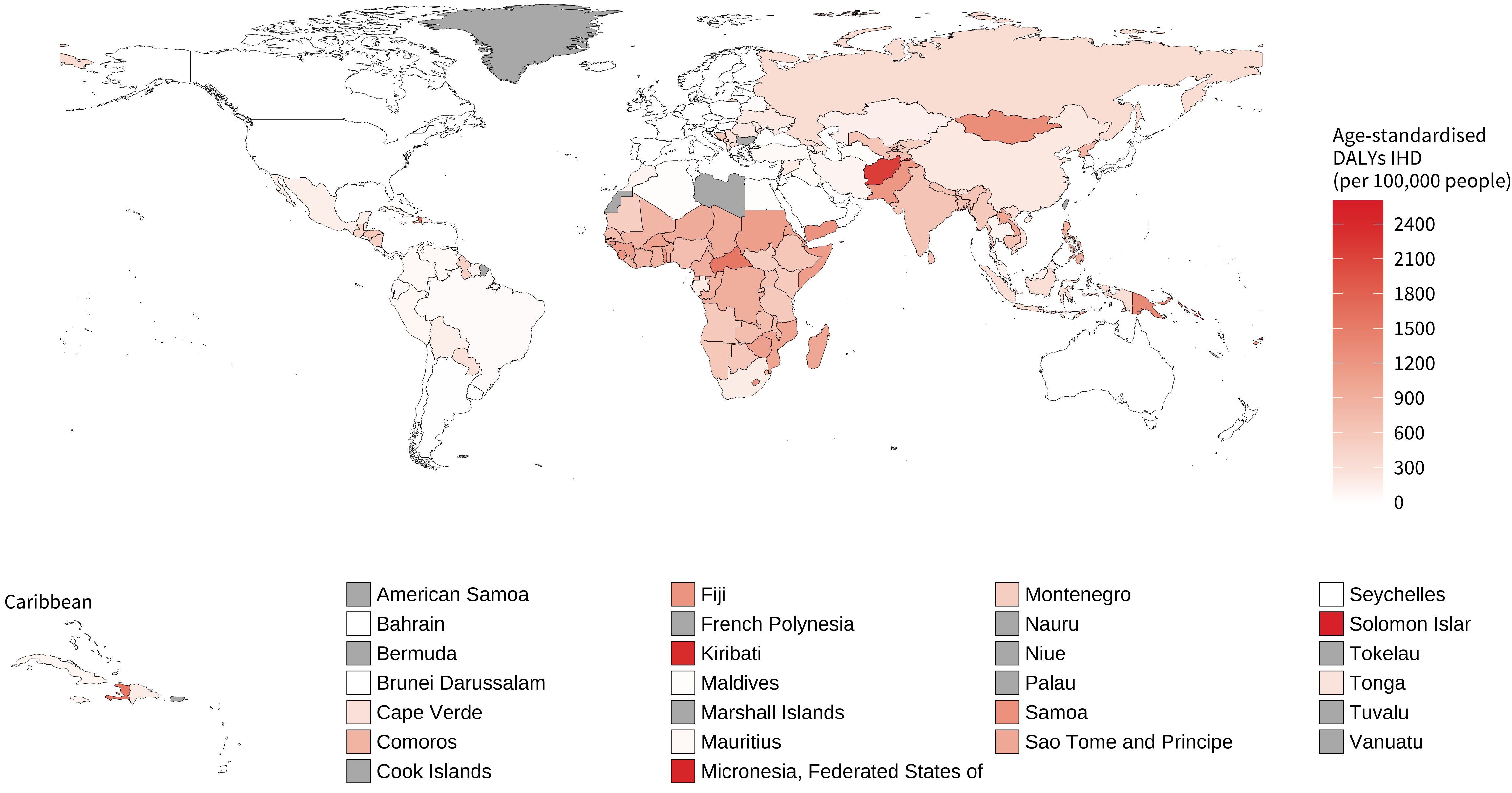
a


Male
Female
5.3%
7.7%
25.4%
13.6%
14.7%
33.3%
6.4%
7.7%
25%
13.4%
17%
30.6%
Africa
Americas
Eastern Mediterranean
Europe
South-East Asia
Western Pacific


b
Male
Female
7.1%
3.8%
7.6%
7.8%
46.3%
27.4%
8.6%
4.7%
9.5%
10.1%
38.3%
28.8%
Africa
Americas
Eastern Mediterranean
Europe
South-East Asia
Western Pacific

Appendix Figure 6: Age-standardised ischemic heart disease DALYs attributable to household air pollution for both sexes, 2019

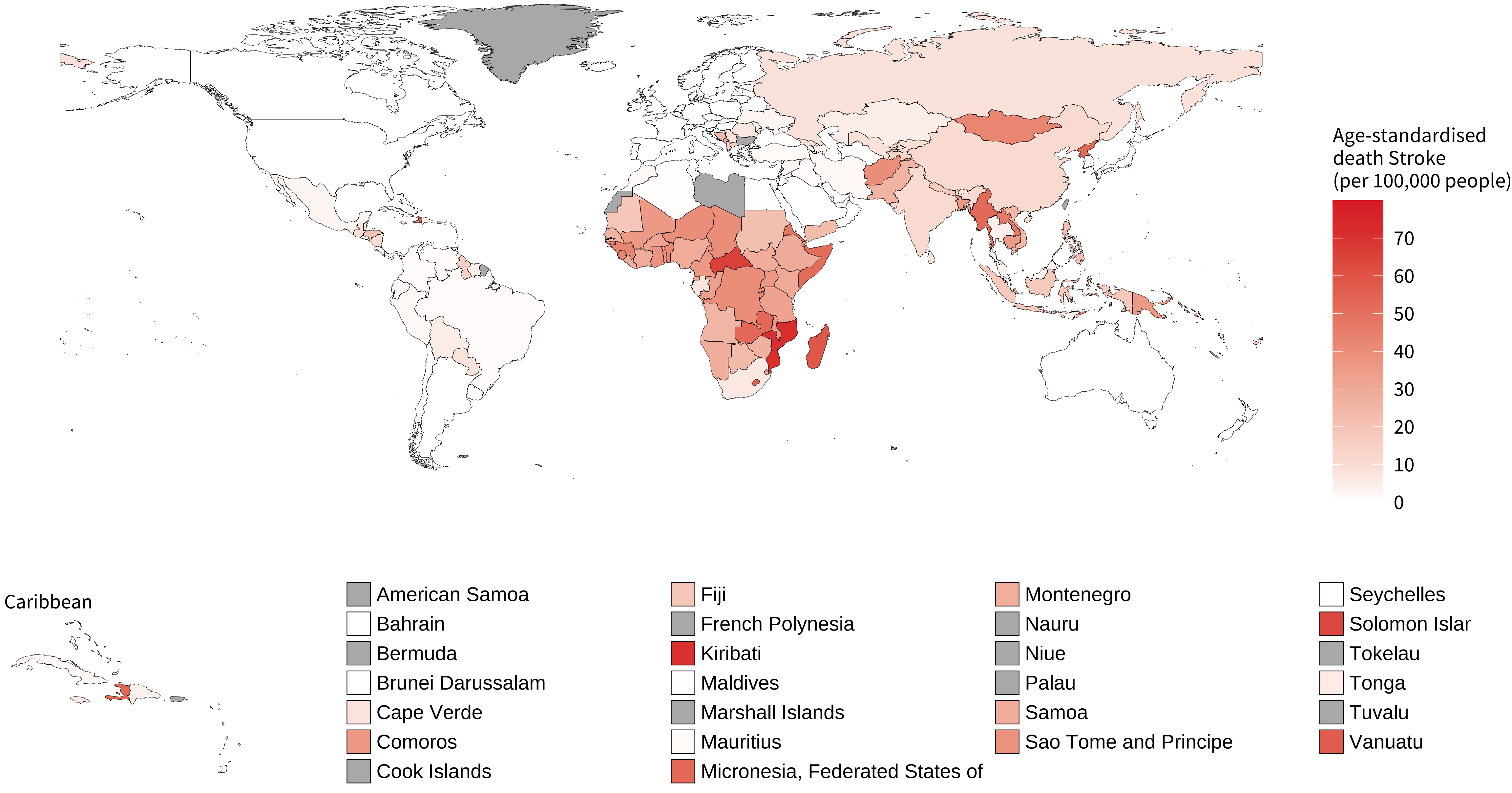
Source:https://www.who.int/data/gho/data/indicators/indicator-details/GHO/household-air-pollution-attributable-dalys-(per-100-000-age-standardized)



Age-standardised
DALYs IHD
(per 100,000 people)
2400
2100
1800
1500
1200
900
600
300
0
Caribbean
American Samoa
Bahrain
Bermuda
Brunei Darussalam
Cape Verde
Comoros
Cook Islands
Fiji
French Polynesia
Kiribati
Maldives
Marshall Islands
Mauritius
Micronesia, Federated States of
Montenegro
Nauru
Niue
Palau
Samoa
Sao Tome and Principe
Seychelles
Solomon Islar
Tokelau
Tonga
Tuvalu
Vanuatu

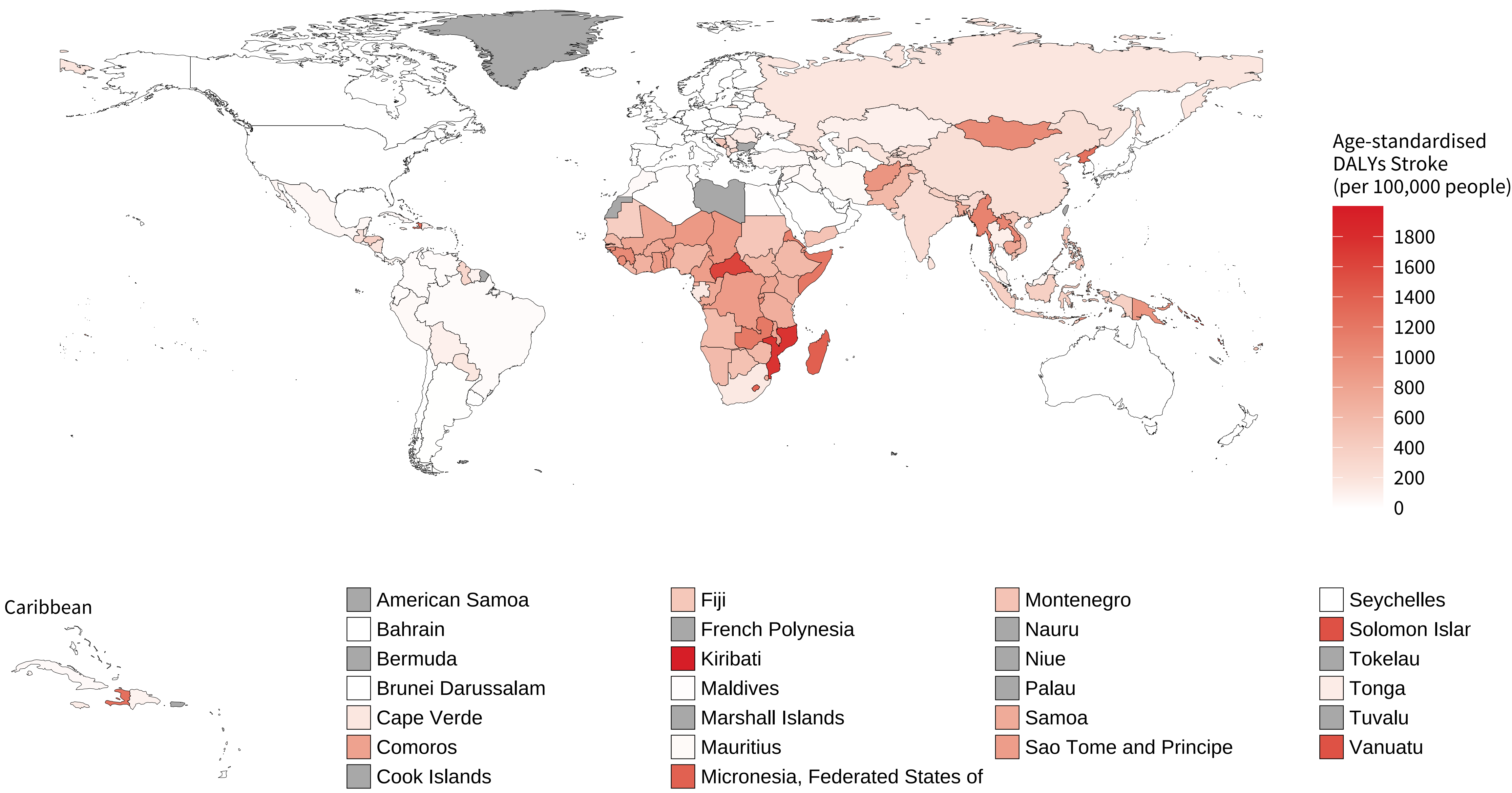
Appendix Figure 7: Age-standardised stroke mortality rates (deaths per 100,000 people) attributable to household air pollution for both sexes, 2019

Source:https://www.who.int/data/gho/data/indicators/indicator-details/GHO/household-air-pollution-attributable-death-rate-(per-100-000-population-age-standardized)


Age-standardised death Stroke (per 100,000 people)
70
60
50
40
30
20
10
0
Caribbean
American Samoa
Bahrain
Bermuda
Brunei Darussalam
Cape Verde
Comoros
Cook Islands
Fiji
French Polynesia
Kiribati
Maldives
Marshall Islands
Mauritius
Micronesia, Federated States of
Montenegro
Nauru
Niue
Palau
Samoa
Sao Tome and Principe
Seychelles
Solomon Islar
Tokelau
Tonga
Tuvalu
Vanuatu

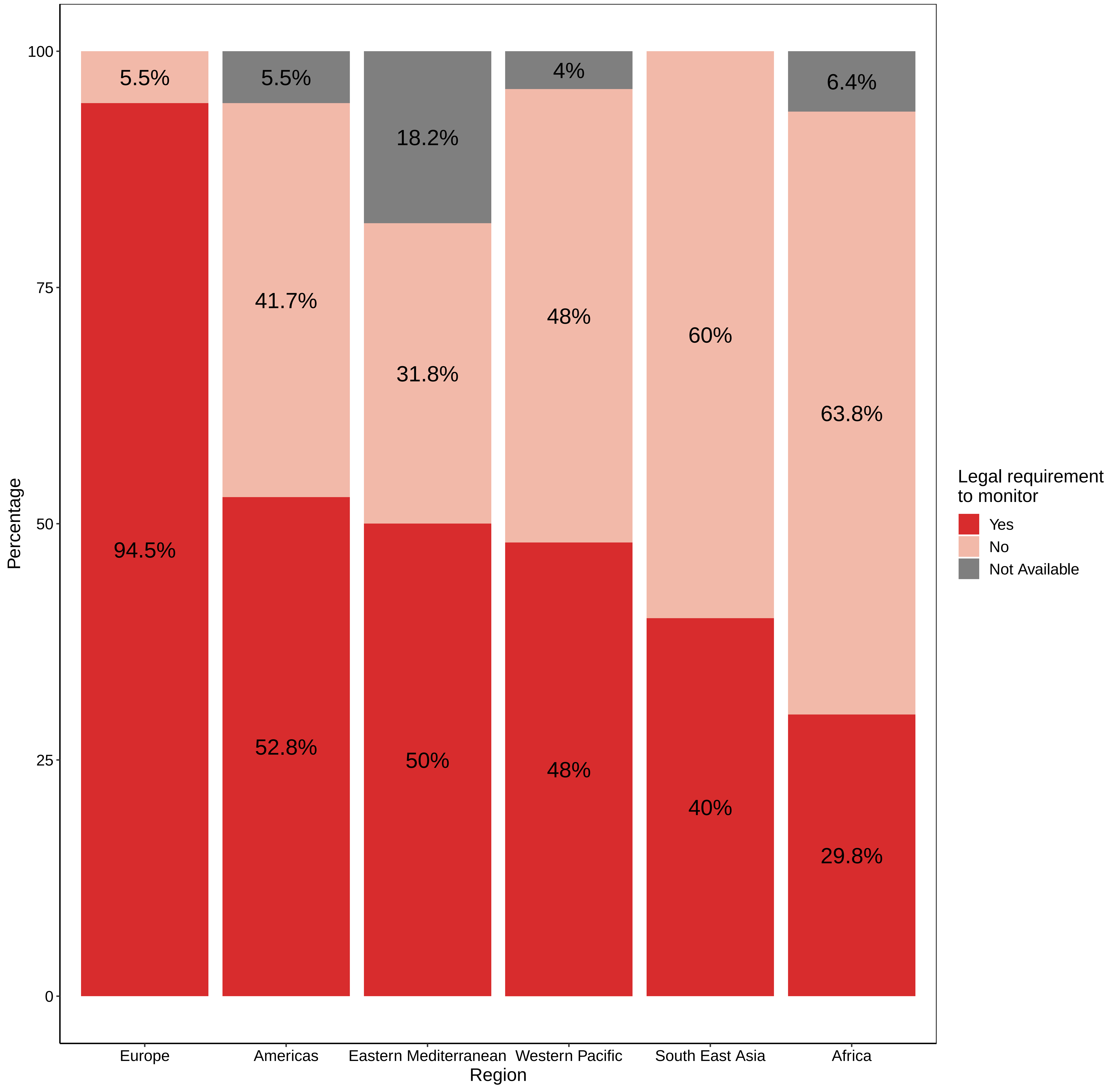
Appendix Figure 8: Age-standardised stroke DALYs attributable to household air pollution for both sexes, 2019

Source:https://www.who.int/data/gho/data/indicators/indicator-details/GHO/household-air-pollution-attributable-dalys-(per-100-000-age-standardized)


Age-standardised DALYs Stroke (per 100,000 people)
1800
1600
1400
1200
1000
800
600
400
200
0
Caribbean
American Samoa
Bahrain
Bermuda
Brunei Darussalam
Cape Verde
Comoros
Cook Islands
Fiji
French Polynesia
Kiribati
Maldives
Marshall Islands
Mauritius
Micronesia, Federated States of
Montenegro
Nauru
Niue
Palau
Samoa
Sao Tome and Principe
Seychelles
Solomon Islar
Tokelau
Tonga
Tuvalu
Vanuatu

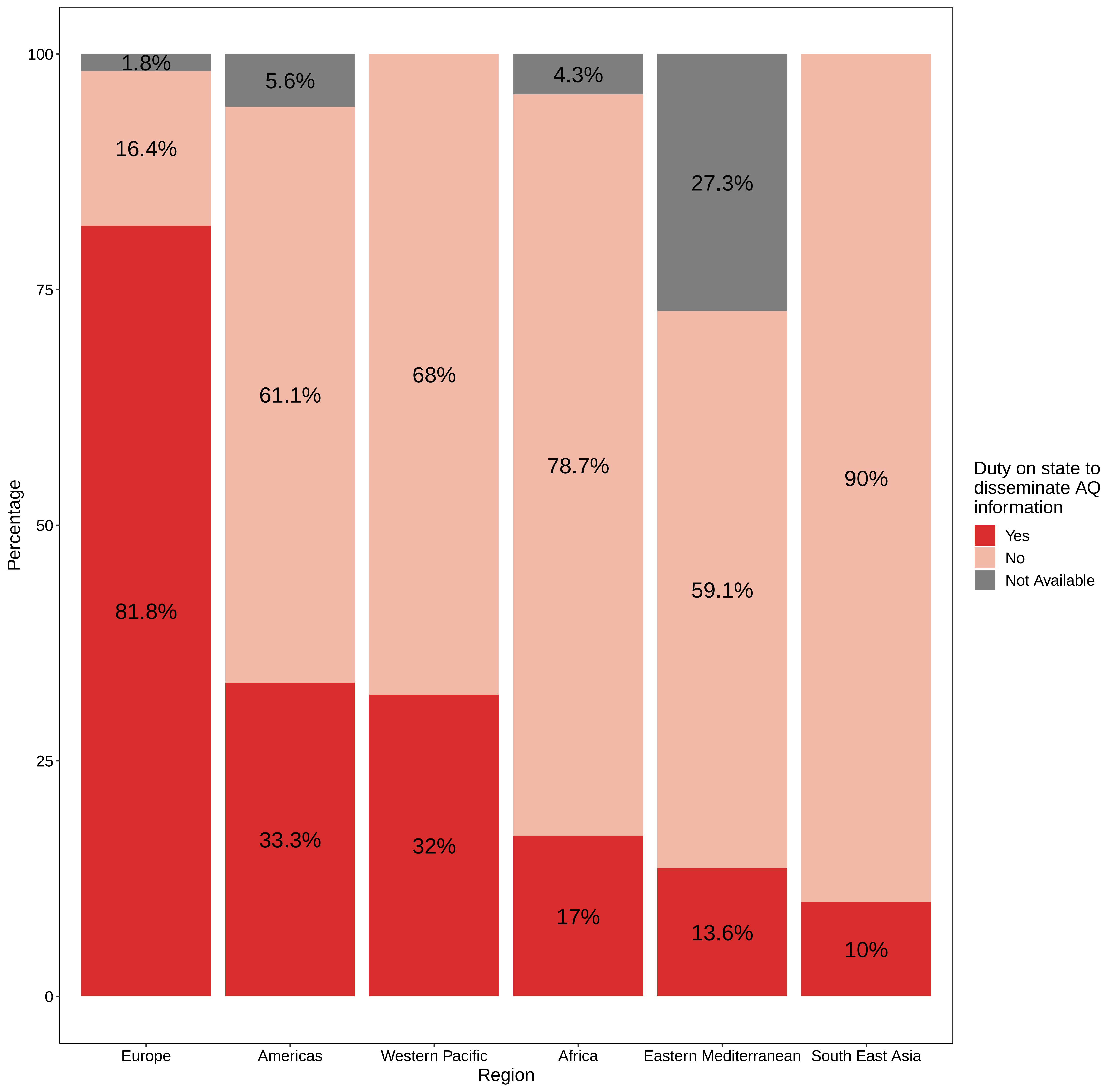
Appendix Figure 9: Regional variations in countries' legal requirement to monitor air quality

Adapted from :https://www.unep.org/resources/report/regulating-air-quality-first-global-assessment-air-pollution-legislation


Percentage
100
75
50
25
0
5.5%
94.5%
5.5%
41.7%
52.8%
18.2%
31.8%
50%
4%
48%
48%
60%
40%
6.4%
63.8%
29.8%
Europe
Americas
Eastern Mediterranean
Western Pacific
South East Asia
Africa
Region
Legal requirement to monitor
Yes
No
Not Available

Appendix Figure 10: Regional variations in duty on state to disseminate air quality information

Adapted from :https://www.unep.org/resources/report/regulating-air-quality-first-global-assessment-air-pollution-legislation



100
75
50
25
0
Percentage
1.8%
16.4%
81.8%
5.6%
61.1%
33.3%
68%
32%
4.3%
78.7%
17%
27.3%
59.1%
13.6%
90%
10%
Europe
Americas
Western Pacific
Africa
Eastern Mediterranean
South East Asia
Region
Duty on state to disseminate AQ information
Yes
No
Not Available

4. Tables

Table 1 - Countries with WHO Health and Environment Scorecards

Country	Factor by which annual mean PM2.5 exceeds WHO guidelines	Existence of legal standards for PM2.5	Standards compliant with WHO air quality guidelines
Afghanistan	12	Yes	No
Algeria	5	No	Insufficient data
Argentina	2	Yes	No
Armenia	7	No	Insufficient data
Australia	2	Yes	No
Austria	2	Yes	No
Azerbaijan	5	No	Insufficient data
Bahrain	10	No	Insufficient data
Bangladesh	9	Yes	No
Belarus	3	Yes	No
Belgium	2	Yes	No
Bolivia (Plurinational State Of)	5	No	Insufficient data
Bosnia and Herzegovina	5	Yes	No
Botswana	3	No	Insufficient data
Brazil	2	Yes	No
Bulgaria	3	Yes	No
Cambodia	4	No	Insufficient data
Canada	1	Yes	No
China	8	Yes	No
Colombia	3	Yes	No
Côte d'Ivoire	8	Insufficient data	Insufficient data
Croatia	3	Yes	No
Cyprus	3	Yes	No
Czechia	3	Yes	No
Democratic Republic of Congo	6	No	Insufficient data
Denmark	2	Yes	No
Egypt	13	No	Insufficient data
Estonia	1	Yes	No
Eswatini	2	Yes	No
Ethiopia	4	No	Insufficient data

Country	Factor by which annual mean PM2.5 exceeds WHO guidelines	Existence of legal standards for PM2.5	Standards compliant with WHO air quality guidelines
Fiji	1	No	Insufficient data
Finland	1	Yes	No
France	2	Yes	No
Georgia	4	Yes	No
Germany	2	Yes	No
Greece	3	Yes	No
Guatemala	4	No	Insufficient data
Guinea	8	No	Insufficient data
Honduras	4	No	Insufficient data
Hungary	3	Yes	No
Iceland	1	No	Insufficient data
India	10	Yes	No
Indonesia	4	Yes	No
Iran (Islamic Republic of)	6	No	Insufficient data
Ireland	2	Yes	No
Israel	4	Yes	No
Italy	3	Yes	No
Jamaica	3	No	Insufficient data
Japan	2	Yes	No
Jordan	5	Insufficient data	Insufficient data
Kazakhstan	5	Yes	No
Kenya	3	Yes	No
Kyrgyzstan	8	No	Insufficient data
Lao People's Democratic Republic	4	No	Insufficient data
Latvia	2	Yes	No
Lebanon	5	No	Insufficient data
Liberia	7	No	Insufficient data
Libya	6	No	Insufficient data
Lithuania	2	Yes	No
Luxembourg	2	Yes	No

Country	Factor by which annual mean PM2.5 exceeds WHO guidelines	Existence of legal standards for PM2.5	Standards compliant with WHO air quality guidelines
Madagascar	3	No	Insufficient data
Malaysia	4	No	Insufficient data
Mali	8	No	Insufficient data
Malta	3	Yes	No
Mauritania	8	No	Insufficient data
Mauritius	2	No	Insufficient data
Mexico	4	Yes	No
Monaco	2	No	Insufficient data
Mongolia	8	Yes	No
Montenegro	4	Yes	No
Morrocco	3	No	Insufficient data
Mozambique	3	No	Insufficient data
Nepal	7	Yes	No
Netherlands	2	Yes	No
Niger	10	No	Insufficient data
Nigeria	11	No	Insufficient data
North Macedonia	5	No	Insufficient data
Norway	1	Yes	No
Pakistan	10	Yes	No
Papua New Guinea	2	No	Insufficient data
Paraguay	2	Yes	No
Peru	6	Yes	No
Philippines			
Poland	4	Yes	No
Portugal	1	Yes	No
Republic of Moldova	2	No	Insufficient data
Romania	3	Yes	No
Russian Federation	2	Yes	No
Rwanda	7	Yes	No
San Marino	2	Yes	No

Country	Factor by which annual mean PM2.5 exceeds WHO guidelines	Existence of legal standards for PM2.5	Standards compliant with WHO air quality guidelines
Saudi Arabia	11	Yes	No
Senegal	8	No	Insufficient data
Serbia	4	Insufficient data	Insufficient data
Seychelles	3	No	Insufficient data
Sierra Leone	8	No	Insufficient data
Slovakia	3	Yes	No
Slovenia	3	Yes	No
Solomon Islands	2	No	Insufficient data
Somalia	3	No	Insufficient data
South Africa	4	Yes	No
Spain	2	Yes	No
Sri Lanka	5	Yes	No
Sudan	4	Insufficient data	Insufficient data
Sweden	1	Yes	No
Switzerland	2	Yes	No
Syrian Arab Republic	5	No	Insufficient data
Tajikistan	11	Insufficient data	Insufficient data
Thailand	5	Yes	No
Timor Leste	4	Yes	No
Trinidad and Tobago	2	Yes	No
Türkiye	5	No	Insufficient data
Turkmenistan	5	No	Insufficient data
Uganda	6	No	Insufficient data
Ukraine	3	No	Insufficient data
United Kingdom of Great Britain and Northern Ireland	2	Yes	No
United States of America	1	Yes	No
Uzbekistan	8	No	Insufficient data
Vanuatu	2	No	Insufficient data
Viet Nam	4	Yes	No
Yemen	8	No	Insufficient data

Country	Factor by which annual mean PM2.5 exceeds WHO guidelines	Existence of legal standards for PM2.5	Standards compliant with WHO air quality guidelines
Zimbabwe	3	No	Insufficient data

Table 2: Full set of meta-analysis data for a) short term and b) long term effect of air pollution

Note: * shows data have been included for visualisation in the main report.

a

Cardiovascular condition	Pollutant	Study size	Relative Risk	Relative Risk 95% CI	Standard error	Odds Ratio	Odds Ratio 95% CI	Percentage increase	Percentage increase 95% CI	Increase in pollutant	Study	Coverage
Atrial Fibrillation	CO	7	1.02	(0.987-1.054)						1000 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation	NO2	8	1.032	(1.006-1.058)						10 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation	O3	7	1.005	(0.996-1.047)						10 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation	PM10	7	1.011	(0.998-1.024)						10 μg/m3	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation	PM2.5	9	1.018	(1.000-1.037)						10 μg/m3	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation	PM2.5	10				1.11	(1.03-1.19)			10 μg/m3	Sci Total Environ. 2021 Aug 25;784:147106. doi: 10.1016/j.scitotenv.2021.147106. Epub 2021 Apr 15.	Global
Atrial Fibrillation	SO2	8	1.029	(1.003-1.057)						10 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial fibrillation prevalence	CO	4				1.02	(0.99-1.06)			1 ppm	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	NO2	5				1.03	(1.01-1.04)			10ppb	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	O3	4				1.01	(0.97-1.06)			10ppb	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	PM10	7				1.03	(1.01-1.05)			10 μg/m3	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	PM2.5	9				1.01	(1.00-1.02)			10 μg/m3	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	SO2	4				1.05	(1.01-1.09)			10ppb	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Cardiac Arrhythmia mortality	CO	3	1.077	(0.790-1.467)						1 ppm	Int J Environ Res Public Health. 2016 Jun 28;13(7):642. doi: 10.3390/ijerph13070642.	Global
Cardiac Arrhythmia mortality	NO2	4	1.026	(1.003-1.050)						10 ppb	Int J Environ Res Public Health. 2016 Jun 28;13(7):642. doi: 10.3390/ijerph13070642.	Global
Cardiac Arrhythmia mortality	O3	3	0.997	(0.975-1.018)						10 ppb	Int J Environ Res Public Health. 2016 Jun 28;13(7):642. doi: 10.3390/ijerph13070642.	Global
Cardiac Arrhythmia mortality	PM10	2	1.009	(0.994-1.024)						10 μg/m3	Int J Environ Res Public Health. 2016 Jun 28;13(7):642. doi: 10.3390/ijerph13070642.	Global
Cardiac Arrhythmia mortality	PM2.5	3	1.027	(0.987-1.068)						10 μg/m3	Int J Environ Res Public Health. 2016 Jun 28;13(7):642. doi: 10.3390/ijerph13070642.	Global
Cardiac Arrhythmia mortality	SO2	3	1.028	(0.988-1.069)						10 ppb	Int J Environ Res Public Health. 2016 Jun 28;13(7):642. doi: 10.3390/ijerph13070642.	Global
Cardiac disease mortality	NO2	4	1.0177		23					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cardiac disease mortality	O3	4	1.0026		31					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cardiac disease mortality	PM10	4	1.0062		15					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cardiac disease mortality	SO2	4	1.0182		41					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cerebrovascular mortality	NO2	5	1.0147		39					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cerebrovascular mortality	O3	5	1.0057		29					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cerebrovascular mortality	PM10	5	1.0057		18					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cerebrovascular mortality	SO2	5	1.0079		26					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Cerebrovascular mortality	PM10	20	1.0044	(1.0022-1.0066)						10 μg/m3	Environ Int. 2020 Sep;142:105876. doi: 10.1016/j.envint.2020.105876. Epub 2020 Jun 23.	Global
Cerebrovascular mortality	PM10	11	1.005	(1.003-1.007)						10 μg/m3	J Am Heart Assoc. 2014 Aug 7;3(4):e000983. doi: 10.1161/JAHA.114.000983.	Global
Cerebrovascular mortality	PM2.5	7	1.0072	(1.0012-1.0132)						10 μg/m3	Environ Int. 2020 Sep;142:105876. doi: 10.1016/j.envint.2020.105876. Epub 2020 Jun 23.	Global
Cerebrovascular mortality	PM2.5	5	1.014	(1.009-1.019)						10 μg/m3	J Am Heart Assoc. 2014 Aug 7;3(4):e000983. doi: 10.1161/JAHA.114.000983.	Global
CVD mortality*	BC	8	1.006	(1.003-1.009)						10 μg/m3	Environ Pollut. 2023 May 1;324:121086. doi: 10.1016/j.envpol.2023.121086. Epub 2023 Jan 14.	Global
CVD mortality*	NO2	15	1.0162		22					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
CVD mortality	NO2	10						1.07	(0.43-1.72)	10 μg/m3	BMJ Open. 2016 Jul 21;6(7):e010751. doi: 10.1136/bmjopen-2015-010751.	Global
CVD mortality*	O3	15	1.0051		13					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
CVD mortality*	PM10	44	1.006	(1.0044-1.0077)						10 μg/m3	Environ Int. 2020 Sep;142:105876. doi: 10.1016/j.envint.2020.105876. Epub 2020 Jun 23.	Global
CVD mortality	PM10	15	1.0049		7					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
CVD mortality	PM10	4						0.48	(0.18-0.78)	10 μg/m3	BMJ Open. 2016 Jul 21;6(7):e010751. doi: 10.1136/bmjopen-2015-010751.	Global
CVD mortality*	PM2.5	28	1.0092	(1.0061-1.0123)						10 μg/m3	Environ Int. 2020 Sep;142:105876. doi: 10.1016/j.envint.2020.105876. Epub 2020 Jun 23.	Global
CVD mortality*	SO2	15	1.0072		17					10 μg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
Diastolic blood pressure	PM10	6				1.28	(1.02-1.60)			10 μg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global
Diastolic blood pressure	PM2.5	11				1.12	(0.74-1.69)			10 μg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global
Heart failure	CO	20	1.0348	(1.0233-1.048)						1 mg/m3	Front Public Health. 2023 Jan 23;10:948765. doi: 10.3389/fpubh.2022.948765. eCollection 2022.	Global
Heart failure	CO	12	1.035	(1.025-1.045)						1 ppm	Lancet. 2013 Sep 21;382(9897):1039-48. doi: 10.1016/S0140-6736(13)60898-3. Epub 2013 Jul 10.	Global
Heart failure*	CO	41	1.032	(1.023-1.042)						1 ppm	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure*	NO2	44	1.038	(1.019-1.057)						10ppb	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure	NO2	19	1.0207	(1.0138-1.0277)						10ppb	Front Public Health. 2023 Jan 23;10:948765. doi: 10.3389/fpubh.2022.948765. eCollection 2022.	Global
Heart failure	NO2	8				1.016	(1.005-1.026)			10 μg/m3	Sci Total Environ. 2023 May 10;872:162191. doi: 10.1016/j.scitotenv.2023.162191. Epub 2023 Feb 11.	Global
Heart failure	NO2	10	1.017	(1.012-1.022)						10 ppb	Lancet. 2013 Sep 21;382(9897):1039-48. doi: 10.1016/S0140-6736(13)60898-3. Epub 2013 Jul 10.	Global
Heart failure	O3	19	1.0095	(1.0024-1.0166)						10ppb	Front Public Health. 2023 Jan 23;10:948765. doi: 10.3389/fpubh.2022.948765. eCollection 2022.	Global
Heart failure	O3	40	1.01	(0.998-1.021)						10ppb	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure*	PM10	49	1.016	(1.011-1.020)						10 μg/m3	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure	PM10	27	1.013	(1.0102-1.0157)						10 μg/m3	Front Public Health. 2023 Jan 23;10:948765. doi: 10.3389/fpubh.2022.948765. eCollection 2022.	Global
Heart failure	PM10	10				1.01	(1.007-1.017)			10 μg/m3	Sci Total Environ. 2023 May 10;872:162191. doi: 10.1016/j.scitotenv.2023.162191. Epub 2023 Feb 11.	Global
Heart failure*	PM2.5	65	1.018	(1.011-1.025)						10 μg/m3	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure	PM2.5	28	1.0129	(1.0093-1.0165)						10 μg/m3	Front Public Health. 2023 Jan 23;10:948765. doi: 10.3389/fpubh.2022.948765. eCollection 2022.	Global
Heart failure	PM2.5	13				1.02	(1.008-1.030)			10 μg/m3	Sci Total Environ. 2023 May 10;872:162191. doi: 10.1016/j.scitotenv.2023.162191. Epub 2023 Feb 11.	Global
Heart failure	SO2	18	1.022	(1.0108-1.0335)						1 ppb	Front Public Health. 2023 Jan 23;10:948765. doi: 10.3389/fpubh.2022.948765. eCollection 2022.	Global
Heart failure*	SO2	38	1.032	(1.017-1.048)						10ppb	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure mortality/hospitalisation	O3	2	1.005	(0.999-1.011)						10 ppb	Lancet. 2013 Sep 21;382(9897):1039-48. doi: 10.1016/S0140-6736(13)60898-3. Epub 2013 Jul 10.	Global
Heart failure mortality/hospitalisation	PM10	6	1.016	(1.012-1.021)						10 μg/m3	Lancet. 2013 Sep 21;382(9897):1039-48. doi: 10.1016/S0140-6736(13)60898-3. Epub 2013 Jul 10.	Global
Heart failure mortality/hospitalisation	PM2.5	6	1.021	(1.014-1.028)						10 μg/m3	Lancet. 2013 Sep 21;382(9897):1039-48. doi: 10.1016/S0140-6736(13)60898-3. Epub 2013 Jul 10.	Global
Heart failure mortality/hospitalisation	SO2	6	1.024	(1.014-1.034)						10 ppb	Lancet. 2013 Sep 21;382(9897):1039-48. doi: 10.1016/S0140-6736(13)60898-3. Epub 2013 Jul 10.	Global

Cardiovascular condition	Pollutant	Study size	Relative Risk	Relative Risk 95% CI	Standard error	Odds Ratio	Odds Ratio 95% CI	Percentage increase	Percentage increase 95% CI	Increase in pollutant	Study	Coverage
Hypertension	NO2	3				1.04	(0.994-1.082)			10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension	PM10	4				1.02	(1.017-1.030)			10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension	PM2.5	3				1.07	(1.003-1.141)			10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension	SO2	3				1.05	(1.012-1.081)			10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
IHD morbidity	NO2	34				1.07	(1.052-1.097)			10ppb	Environ Health. 2020 May 1;19(1):47. doi: 10.1186/s12940-020-00601-1.	Global
IHD morbidity	NO2	41	1.022	(1.016-1.029)						10ppb	Environ Health. 2020 May 1;19(1):47. doi: 10.1186/s12940-020-00601-1.	Global
IHD mortality	NO2	2	1.013		118					10 µg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
IHD mortality	PM10	2	0.9963		52					10 µg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
IHD mortality	PM2.5	3						3.36	(0.68-6.10)	10 µg/m3	Thorax. 2014 Jul;69(7):660-5. doi: 10.1136/thoraxjnl-2013-204492. Epub 2014 Apr 4.	Global
IHD mortality	SO2	2	1.028		82					10 µg/m3	BMC Public Health. 2013 Apr 18;13:360. doi: 10.1186/1471-2458-13-360.	China
MI hospitalization	PM2.5	16	1.024	(1.007-1.041)						10 µg/m3	Environ Sci Pollut Res Int. 2016 Apr;23(7):6139-48. doi: 10.1007/s11356-016-6186-3. Epub 2016 Feb 5.	Global
MI mortality	PM10	4	1.008	(1.004-1.012)						10 µg/m3	Environ Sci Pollut Res Int. 2016 Apr;23(7):6139-48. doi: 10.1007/s11356-016-6186-3. Epub 2016 Feb 5.	Global
MI mortality	PM2.5	4	1.012	(1.010-1.015)						10 µg/m3	Environ Sci Pollut Res Int. 2016 Apr;23(7):6139-48. doi: 10.1007/s11356-016-6186-3. Epub 2016 Feb 5.	Global
Myocardial infarction risk*	CO	20	1.048	(1.026-1.070)						1 mg/m3	JAMA. 2012 Feb 15;307(7):713-21. doi: 10.1001/jama.2012.126.	Global
Myocardial infarction risk*	NO2	21	1.011	(1.006-1.016)						10 µg/m3	JAMA. 2012 Feb 15;307(7):713-21. doi: 10.1001/jama.2012.126.	Global
Myocardial infarction risk	O3	19	1.003	(0.997-1.010)						10 µg/m3	JAMA. 2012 Feb 15;307(7):713-21. doi: 10.1001/jama.2012.126.	Global
Myocardial infarction risk*	PM10	17	1.006	(1.002-1.009)						10 µg/m3	JAMA. 2012 Feb 15;307(7):713-21. doi: 10.1001/jama.2012.126.	Global
Myocardial infarction risk*	PM2.5	13	1.025	(1.015-1.036)						10 µg/m3	JAMA. 2012 Feb 15;307(7):713-21. doi: 10.1001/jama.2012.126.	Global
Myocardial infarction risk*	SO2	14	1.01	(1.003-1.017)						10 µg/m3	JAMA. 2012 Feb 15;307(7):713-21. doi: 10.1001/jama.2012.126.	Global
Stroke incidence	CO	5				1.00	(0.997-1.001)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke incidence	NO2	7				1.00	(1.000-1.003)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke incidence	O3	10				1.00	(0.999-1.000)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke incidence	PM10	13				1.02	(0.981-1.055)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke incidence	PM2.5	18				1.05	(1.020-1.076)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke incidence	SO2	4				1.00	(1.000-1.003)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality	CO	5				1.05	(0.980-1.115)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality	CO	37	1.054	(0.999-1.108)						1 ppm	BMJ. 2015 Mar 24;350:h1295. doi: 10.1136/bmj.h1295.	Global
Stroke mortality*	NO2	70	1.016	(1.007-1.023)						10 ppb	BMJ. 2015 Mar 24;350:h1295. doi: 10.1136/bmj.h1295.	Global
Stroke mortality	NO2	5						1.76	(0.68-2.85)	10 µg/m3	BMJ Open. 2016 Jul 21;6(7):e010751. doi: 10.1136/bmjopen-2015-010751.	Global
Stroke mortality	NO2	10				1.01	(1.003-1.016)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality	O3	6				1.01	(0.999-1.010)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality*	O3	53	1.004	(1.001-1.006)						10 ppb	BMJ. 2015 Mar 24;350:h1295. doi: 10.1136/bmj.h1295.	Global
Stroke mortality*	PM10	78	1.003	(1.002-1.004)						10 µg/m3	BMJ. 2015 Mar 24;350:h1295. doi: 10.1136/bmj.h1295.	Global
Stroke mortality	PM10	10				1.01	(1.003-1.010)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality	PM2.5	12				1.01	(1.005-1.012)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality	PM2.5	3						1.85	(0.74-2.97)	10 µg/m3	Thorax. 2014 Jul;69(7):660-5. doi: 10.1136/thoraxjnl-2013-204492. Epub 2014 Apr 4.	Global
Stroke mortality*	PM2.5	41	1.012	(1.011-1.012)						10 µg/m3	BMJ. 2015 Mar 24;350:h1295. doi: 10.1136/bmj.h1295.	Global
Stroke mortality	SO2	6				1.01	(1.005-1.008)			10 µg/m3	Environ Health Prev Med. 2021 Jan 26;26(1):15. doi: 10.1186/s12199-021-00937-1.	Global
Stroke mortality*	SO2	52	1.022	(1.014-1.031)						10 ppb	BMJ. 2015 Mar 24;350:h1295. doi: 10.1136/bmj.h1295.	Global
Systolic blood pressure	PM10	6				1.25	(0.99-1.58)			10 µg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global
Systolic blood pressure	PM2.5	11				1.38	(0.84-2.28)			10 µg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global

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Cardiovascular condition	Pollutant	Study size	Relative Risk	Relative Risk 95% CI	Odds Ratio	Odds Ratio 95% CI	Hazard Ratio	Hazard Ratio 95% CI	Percentage increase	Percentage increase 95% CI	Increase in pollutant	Study	Coverage
Acute coronary events	NOx	11					1.01	(0.98 -1.05)			20 μg/m3	BMJ. 2014 Jan 21;348:f7412. doi: 10.1136/bmj.f7412.	Europe
Acute coronary events	NO2	11					1.03	(0.97 -1.08)			10 μg/m3	BMJ. 2014 Jan 21;348:f7412. doi: 10.1136/bmj.f7412.	Europe
Acute coronary events	PM10	11					1.12	(1.01 -1.25)			10 μg/m3	BMJ. 2014 Jan 21;348:f7412. doi: 10.1136/bmj.f7412.	Europe
Acute coronary events	PM2.5	11					1.13	(0.98 -1.30)			5 μg/m3	BMJ. 2014 Jan 21;348:f7412. doi: 10.1136/bmj.f7412.	Europe
Atrial Fibrillation incidence	CO	2					1.02	(1.013-1.022)			1000 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation incidence	NO2	4					1.02	(1.001-1.033)			10 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation incidence	NO2	2					1.01	(1.01-1.02)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Atrial Fibrillation incidence	O3	3					1.01	(0.927-1.094)			10 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation incidence	PM10	4					1.03	(1.032-1.035)			10 μg/m3	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation incidence	PM10	4					0.91	(0.74-1.12)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Atrial Fibrillation incidence	PM2.5	4					0.93	(0.68-1.27)			5 and 10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Atrial Fibrillation incidence	SO2	2					1.01	(1.004-1.007)			10 ppb	Int Heart J. 2021 Mar 30;62(2):290-297. doi: 10.1536/ihj.20-523. Epub 2021 Mar 6.	Global
Atrial Fibrillation incidence	PM2.5	6					1.12	(1.031-1.207)			10 μg/m3	Int Heart J. 2021 Mar 30;62(2):290,297. doi: 10.1536/ihj.20,523. Epub 2021 Mar 6.	Global
Atrial fibrillation prevalence	NO2	3			1.02	(1.00-1.04)					10 ppb	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	PM10	3			1.03	(1.03-1.04)					10 μg/m3	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Atrial fibrillation prevalence	PM2.5	4			1.07	(1.04-1.10)					10 μg/m3	Ecotoxicol Environ Saf. 2021 Jan 15;208:111508. doi: 10.1016/j.ecoenv.2020.111508. Epub 2020 Nov 1.	Global
Cerebrovascular mortality	BC	3	1.082	(0.920-1.273)							10 μg/m3	Environ Pollut. 2023 May 1;324:121086. doi: 10.1016/j.envpol.2023.121086. Epub 2023 Jan 14.	Global
Cerebrovascular mortality	NO2	17					1.17	(0.936-1.456)			10 ppb	PLoS One. 2021 Feb 4;16(2):e0246451. doi: 10.1371/journal.pone.0246451. eCollection 2021.	Global
Cerebrovascular mortality	PM2.5	n=3740					1.13	(1.048-1.214)			5 μg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
Cerebrovascular mortality	BC	n=3740					1.08	(1.016-1.138)			0.5x10−5/m	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
Cerebrovascular mortality	NO2	n=3740					1.07	(1.011-1.129)			10 μg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
Cerebrovascular mortality	O3	n=3740					0.88	(0.817-0.953)			10 μg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
Cerebrovascular mortality	PM2.5	17					1.24	(1.13-1.36)			10 μg/m3	J Am Heart Assoc. 2021 Jan 5;10(1):e016890. doi: 10.1161/JAHA.120.016890. Epub 2020 Dec 31.	Global
Coronary heart disease incidence	BC	n=137148					1.02	(0.99-1.06)			10−5/m	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Coronary heart disease incidence	NO2	n=137148					1.04	(1.01-1.07)			10 μg/m3	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Coronary heart disease incidence	O3	n=137148					0.94	(0.90-0.98)			10 μg/m3	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Coronary heart disease incidence	PM2.5	n=137148					1.02	(0.95-1.10)			5 μg/m3	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Coronary heart disease incidence	NO2	6					1.02	(0.95-1.10)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Coronary heart disease incidence	PM10	9					1.09	(0.98-1.21)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Coronary heart disease incidence	PM2.5	8					1.04	(1.00-1.09)			5 and 10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Coronary heart disease mortality	BC	3	1.209	(0.921-1.588)							10 μg/m3	Environ Pollut. 2023 May 1;324:121086. doi: 10.1016/j.envpol.2023.121086. Epub 2023 Jan 14.	Global
CVD morbidity	NO2	10					1.11	(1.007-1.219)			10 μg/m3	Environ Int. 2023 Aug;178:108060. doi: 10.1016/j.envint.2023.108060. Epub 2023 Jun 23.	China
CVD morbidity	PM2.5	5					1.09	(1.00-1.18)			10 μg/m3	Curr Probl Cardiol. 2023 Jun;48(6):101670. doi: 10.1016/j.cpcardiol.2023.101670. Epub 2023 Feb 23.	Global
CVD morbidity	PM10	7	1.07	(1.01-1.13)							10 μg/m3	Front Public Health. 2023 Mar 28;11:1134341. doi: 10.3389/fpubh.2023.1134341. eCollection 2023.	LMIC
CVD morbidity	PM2.5	10	1.11	(1.05-1.17)							10 μg/m3	Front Public Health. 2023 Mar 28;11:1134341. doi: 10.3389/fpubh.2023.1134341. eCollection 2023.	LMIC
CVD mortality	BC	n=15542					1.09	(1.055-1.116)			0.5x10−5/m	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
CVD mortality	NO2	29					1.14	(0.997-1.301)			10 ppb	PLoS One. 2021 Feb 4;16(2):e0246451. doi: 10.1371/journal.pone.0246451. eCollection 2021.	Global
CVD mortality	NO2	6					1.14	(0.89-1.47)			10 ppb	Res Rep Health Eff Inst. 2023 May;2016(213):1-53.	Asia
CVD mortality	NO2	n=15542					1.09	(1.060-1.120)			10 μg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
CVD mortality	O3	6	1.01	(0.99-1.03)							10 ppb	BMJ Open. 2016 Feb 23;6(2):e009493. doi: 10.1136/bmjopen-2015-009493.	Global
CVD mortality	PM10	5	1.14	(0.99-1.30)							10 μg/m3	Front Public Health. 2023 Mar 28;11:1134341. doi: 10.3389/fpubh.2023.1134341. eCollection 2023.	Asia
CVD mortality	PM10	5					1.02	(0.89-1.16)			10 μg/m3	Environ Pollut. 2018 Nov;242(Pt B):1299-1307. doi: 10.1016/j.envpol.2018.07.041. Epub 2018 Jul 28.	Global
CVD mortality	PM2.5	18					1.10	(1.07-1.12)			5 and 10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
CVD mortality	PM2.5	11	1.1	(1.06-1.14)							10 μg/m3	Front Public Health. 2023 Mar 28;11:1134341. doi: 10.3389/fpubh.2023.1134341. eCollection 2023.	LMIC
CVD mortality	PM2.5	14					1.12	(1.07-1.18)			10 μg/m3	Curr Probl Cardiol. 2023 Jun;48(6):101670. doi: 10.1016/j.cpcardiol.2023.101670. Epub 2023 Feb 23.	Global
CVD mortality	PM2.5	6					1.05	(0.99-1.12)			5 μg/m3	Res Rep Health Eff Inst. 2023 May;2016(213):1-53.	Asia
CVD mortality	PM2.5	11					1.12	(1.08-1-16)			10 μg/m3	Environ Pollut. 2018 Nov;242(Pt B):1299-1307. doi: 10.1016/j.envpol.2018.07.041. Epub 2018 Jul 28.	Global
CVD mortality	PM2.5	n=15542					1.14	(1.095-1.176)			5 μg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
CVD mortality	BC	13	1.093	(0.955-1.250)							10 μg/m3	Environ Pollut. 2023 May 1;324:121086. doi: 10.1016/j.envpol.2023.121086. Epub 2023 Jan 14.	Global
CVD mortality*	NO2	13					1.17	(1.10-1.25)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
CVD mortality*	O3	n=15542					0.89	(0.854-0.922)			10 μg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
CVD mortality*	PM10	11					1.17	(1.04-1.30)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
CVD mortality*	PM2.5	28					1.14	(1.08-1.21)			10 μg/m3	J Am Heart Assoc. 2021 Jan 5;10(1):e016890. doi: 10.1161/JAHA.120.016890. Epub 2020 Dec 31.	Global
Diastolic blood pressure	PM10	1			1.18	(1.04-1.34)					10 μg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global
Diastolic blood pressure	PM2.5	2			4.52	(0.23-89.77)					10 μg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global
Heart failure incidence	NO2	3					1.42	(0.93-2.18)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Heart failure incidence	PM10	5					1.25	(1.04-1.50)			10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Heart failure incidence	PM2.5	4					1.07	(0.72-1.60)			5 and 10 μg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Heart failure incidence-mortality	CO	3	2.265	(0.474-10.832)							1 ppm	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure incidence-mortality	NO2	8			1.07	(1.028-1.118)					10 μg/m3	Sci Total Environ. 2023 May 10;872:162191. doi: 10.1016/j.scitotenv.2023.162191. Epub 2023 Feb 11.	Global
Heart failure incidence-mortality	O3	5	1.011	(0.860-1.187)							10ppb	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure incidence-mortality	PM10	8			1.19	(1.045-1.356)					10 μg/m3	Sci Total Environ. 2023 May 10;872:162191. doi: 10.1016/j.scitotenv.2023.162191. Epub 2023 Feb 11.	Global
Heart failure incidence-mortality	PM2.5	13			1.20	(1.079-1.326)					10 μg/m3	Sci Total Environ. 2023 May 10;872:162191. doi: 10.1016/j.scitotenv.2023.162191. Epub 2023 Feb 11.	Global
Heart failure incidence-mortality	SO2	2	3.929	(0.282-54.798)							10ppb	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure incidence-mortality*	NO2	10	1.204	(1.069-1.356)							10ppb	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global

Cardiovascular condition	Pollutant	Study size	Relative Risk	Relative Risk 95% CI	Odds Ratio	Odds Ratio 95% CI	Hazard Ratio	Hazard Ratio 95% CI	Percentage increase	Percentage increase 95% CI	Increase in pollutant	Study	Coverage
Heart failure incidence-mortality*	PM10	8	1.212	(1.010-1.454)							10 µg/m3	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Heart failure incidence-mortality*	PM2.5	15	1.748	(1.112-2.747)							10 µg/m3	Environ Health Perspect. 2023 Jul;131(7):76001. doi: 10.1289/EHP11506. Epub 2023 Jul 3.	Global
Hemorrhagic stroke incidence or mortality	PM2.5	7					1.10	(1.04-1.16)			1.4 µg/m3-10 µg/m3	Environ Sci Pollut Res Int. 2021 May;28(17):20970-20980. doi: 10.1007/s11356-021-13074-7. Epub 2021 Mar 10.	Global
Hypertension incidence	PM2.5	10	1.21	(1.07-1.35)							10 µg/m3	Environ Res. 2022 Mar;204(Pt D):112352. doi: 10.1016/j.envres.2021.112352. Epub 2021 Nov 9.	Global
Hypertension incidence-women	PM2.5	6					1.23	(1.08-1.40)			10 µg/m3	Ecotoxicol Environ Saf. 2021 Jan 15;208:111492. doi: 10.1016/j.ecoenv.2020.111492. Epub 2020 Oct 26.	Global
Hypertension incidence	PM2.5	10					1.07	(1.01-1.14)			5 and 10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Hypertension prevalence	NO2	6			1.03	(1.005-1.063)					10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension prevalence	NOx	4			1.13	(0.933-1.361)					10 µg/m3	Hypertension. 2016 Jul;68(1):62,70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension prevalence	PM10	3			1.05	(1.036-1.072)					10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension prevalence	PM10	11			1.11	(1.07-1.16)					10 µg/m3	Int J Environ Health Res. 2023 Mar;33(3):268-283. doi: 10.1080/09603123.2021.2022106. Epub 2022 Jan 4.	Global
Hypertension prevalence	PM2.5	5			1.07	(0.985-1.152)					10 µg/m3	Hypertension. 2016 Jul;68(1):62-70. doi: 10.1161/HYPERTENSIONAHA.116.07218. Epub 2016 May 31.	Global
Hypertension prevalence	PM2.5	26			1.15	(1.10-1.20)					10 µg/m3	Int J Environ Health Res. 2023 Mar;33(3):268-283. doi: 10.1080/09603123.2021.2022106. Epub 2022 Jan 4.	Global
Hypertension prevalence	PM2.5	18			1.06	(1.03-1.09)					10 µg/m3	Environ Res. 2022 Mar;204(Pt D):112352. doi: 10.1016/j.envres.2021.112352. Epub 2021 Nov 9.	Global
Hypertension prevalence	CO	1			1.13	(1.00-1.28)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence	NO2	27			1.01	(1.00-1.03)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence	NOx	17			1.01	(0.98-1.03)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence	O3	3			0.96	(0.85-1.09)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence	PM10	22			1.04	(1.02-1.06)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence	PM2.5	37			1.10	(1.07-1.14)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence	SO2	3			1.21	(1.08-1.36)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-Child	CO	1			1.01	(1.007-1.011)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-Child	NO2	1			1.02	(1.00-1.03)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-Child	O3	2			1.26	(0.81-1.09)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-Child	PM10	2			1.15	(1.01-1.32)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-Child	PM2.5	2			2.82	(0.51-15.68)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-Child	SO2	2			8.57	(0.13-575.58)					10 µg/m3	Sci Total Environ. 2021 Nov 20;796:148620. doi: 10.1016/j.scitotenv.2021.148620. Epub 2021 Jul 7.	Global
Hypertension prevalence-women	PM2.5	4			1.07	(1.00-1.14)					10 µg/m3	Ecotoxicol Environ Saf. 2021 Jan 15;208:111492. doi: 10.1016/j.ecoenv.2020.111492. Epub 2020 Oct 26.	Global
IHD (women to men ratio-RRR)	PM2.5	9	1.05	(1.02-1.08)							10 µg/m3	Front Public Health. 2022 Feb 2;10:802167. doi: 10.3389/fpubh.2022.802167. eCollection 2022.	Global
IHD incidence	PM2.5	4	1.07	(0.99-1.17)							10 µg/m3	Perfusion. 2024 Jan;39(1):210-222. doi: 10.1177/02676591221131485. Epub 2022 Nov 7.	Global
IHD mortality	BC	n=7265					1.08	(1.033-1.125)			0.5x10–5/m	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
IHD mortality	NO2	6					1.05	(1.03-1.08)			10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
IHD mortality	NO2	n=7265					1.10	(1.053-1.145)			10 µg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
IHD mortality	O3	4	1.02	(1.00.1.04)							10 ppb	BMJ Open. 2016 Feb 23;6(2):e009493. doi: 10.1136/bmjopen-2015-009493.	Global
IHD mortality	PM10	5					1.03	(1.01-1.05)			10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
IHD mortality	PM2.5	15					1.11	(1.07-1.16)			5 and 10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
IHD mortality	PM2.5	23					1.23	(1.15-1.31)			10 µg/m3	J Am Heart Assoc. 2021 Jan 5;10(1):e016890. doi: 10.1161/JAHA.120.016890. Epub 2020 Dec 31.	Global
IHD mortality	PM2.5	n=7265					1.11	(1.056-1.169)			5 µg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
IHD mortality	PM2.5	22	1.16	(1.10-1.21)							10 µg/m3	Environ Int. 2020 Oct;143:105974. doi: 10.1016/j.envint.2020.105974. Epub 2020 Jul 20.	Global
IHD mortality*	BC	8	1.149	(1.024-1.291)							10 µg/m3	Environ Pollut. 2023 May 1;324:121086. doi: 10.1016/j.envpol.2023.121086. Epub 2023 Jan 14.	Global
IHD mortality*	NO2	19					1.13	(1.076-1.182)			10 ppb	PLoS One. 2021 Feb 4;16(2):e0246451. doi: 10.1371/journal.pone.0246451. eCollection 2021.	Global
IHD mortality*	O3	n=7265					0.87	(0.821-0.921)			10 µg/m3	Res Rep Health Eff Inst. 2021 Sep;2021(208):1-127.	Europe
IHD mortality*	PM10	13	1.06	(1.01-1.10)							10 µg/m3	Environ Int. 2020 Oct;143:105974. doi: 10.1016/j.envint.2020.105974. Epub 2020 Jul 20.	Global
IHD mortality*	PM2.5	24	1.21	(1.15-1.28)							10 µg/m3	Perfusion. 2024 Jan;39(1):210-222. doi: 10.1177/02676591221131485. Epub 2022 Nov 7.	Global
MI incidence	PM2.5	11					1.08	(0.99-1.18)			10 µg/m3	J Am Heart Assoc. 2021 Jan 5;10(1):e016890. doi: 10.1161/JAHA.120.016890. Epub 2020 Dec 31.	Global
MI incidence	PM2.5	8					1.10	(1.02-1.18)			10 µg/m3	Chemosphere. 2021 Mar;267:128903. doi: 10.1016/j.chemosphere.2020.128903. Epub 2020 Nov 7.	Global
Post-MI mortality	PM2.5	4					1.07	(1.04-1.9)			10 µg/m3	Chemosphere. 2021 Mar;267:128903. doi: 10.1016/j.chemosphere.2020.128903. Epub 2020 Nov 7.	Global
Stroke incidence	O3	n=137148					0.96	(0.91-1.01)			10 µg/m3	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Stroke incidence	PM2.5	14					1.13	(1.11-1.15)			10 µg/m3	J Am Heart Assoc. 2021 Jan 5;10(1):e016890. doi: 10.1161/JAHA.120.016890. Epub 2020 Dec 31.	Global
Stroke incidence	NO2	11					1.13	(1.00-1.28)			10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Stroke incidence	PM10	13					1.15	(0.90-1.47)			10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Stroke incidence	PM2.5	15					1.13	(1.06-1.19)			5 and 10 µg/m3	J Evid Based Med. 2020 May;13(2):102-115. doi: 10.1111/jebm.12380. Epub 2020 Mar 13.	Global
Stroke incidence	PM2.5	11	1	(0.96-1.04)							10 µg/m3	Front Public Health. 2022 Feb 2;10:802167. doi: 10.3389/fpubh.2022.802167. eCollection 2022.	Global
Stroke incidence	PM10 or co	20					1.06	(1.018-1.105)			10 µg/m3	Stroke. 2015 Nov;46(11):3058-66. doi: 10.1161/STROKEAHA.115.009913. Epub 2015 Oct 13.	Global
Stroke incidence*	BC	n=137148					1.06	(1.02-1.10)			10–5/m	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Stroke incidence*	NO2	n=137148					1.08	(1.04-1.12)			10 µg/m3	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Stroke incidence*	PM2.5	n=137148					1.10	(1.01-1.21)			5 µg/m3	Lancet Planet Health. 2021 Sep;5(9):e620-e632. doi: 10.1016/S2542-5196(21)00195-9.	Europe
Stroke mortality	O3	2							1.01	(0.97-1.05)	10 ppb	BMJ Open. 2016 Feb 23;6(2):e009493. doi: 10.1136/bmjopen-2015-009493.	Global
Stroke mortality	O3	20							1.35	(−0.49-3.22)	10 ppb	Int J Cardiol. 2014 Aug 1;175(2):307-13. doi: 10.1016/j.ijcard.2014.05.044. Epub 2014 May 17.	Global
Stroke mortality	PM10	9							1.01	(0.83-1.21)	10 µg/m3	Environ Int. 2020 Oct;143:105974. doi: 10.1016/j.envint.2020.105974. Epub 2020 Jul 20.	Global
Stroke mortality	PM10 or co	12	1.08	(0.992-1.177)							10 µg/m3	Stroke. 2015 Nov;46(11):3058-66. doi: 10.1161/STROKEAHA.115.009913. Epub 2015 Oct 13.	Global
Stroke mortality	PM2.5	8							1.34	(0.27-2.42)	10 µg/m3	Int J Cardiol. 2014 Aug 1;175(2):307-13. doi: 10.1016/j.ijcard.2014.05.044. Epub 2014 May 17.	Global
Stroke mortality*	CO	16							7.78	(4.49-11.60)	1 ppm	Int J Cardiol. 2014 Aug 1;175(2):307-13. doi: 10.1016/j.ijcard.2014.05.044. Epub 2014 May 17.	Global
Stroke mortality*	NO2	24							1.50	(0.37-2.63)	10 ppb	Int J Cardiol. 2014 Aug 1;175(2):307-13. doi: 10.1016/j.ijcard.2014.05.044. Epub 2014 May 17.	Global
Stroke mortality*	PM10	21							0.65	(0.54-0.77)	10 µg/m3	Int J Cardiol. 2014 Aug 1;175(2):307-13. doi: 10.1016/j.ijcard.2014.05.044. Epub 2014 May 17.	Global
Stroke mortality*	PM2.5	16	1.11	(1.04-1.18)							10 µg/m3	Environ Int. 2020 Oct;143:105974. doi: 10.1016/j.envint.2020.105974. Epub 2020 Jul 20.	Global

Cardiovascular condition	Pollutant	Study size	Relative Risk	Relative Risk 95% CI	Odds Ratio	Odds Ratio 95% CI	Hazard Ratio	Hazard Ratio 95% CI	Percentage increase	Percentage increase 95% CI	Increase in pollutant	Study	Coverage
Stroke mortality*	SO2	22							2.45	(1.83-3.07)	10 ppb	Int J Cardiol. 2014 Aug 1;175(2):307-13. doi: 10.1016/j.ijcard.2014.05.044. Epub 2014 May 17.	Global
Systolic blood pressure	PM10	1			1.58	(1.29-1.95)					10 µg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global
Systolic blood pressure	PM2.5	3			4.18	(1.66-10.48)					10 µg/m3	Blood Press. 2016 Jun;25(3):169-76. doi: 10.3109/08037051.2015.1111019. Epub 2015 Dec 4.	Global

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